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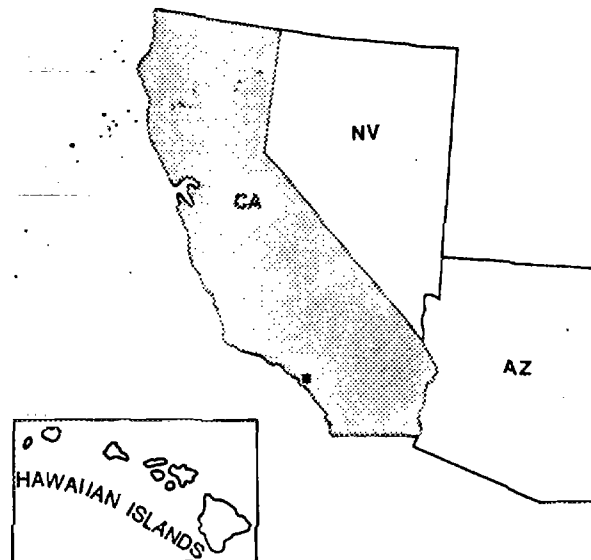
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AERIAL PHOTOGRAPHIC ANALYSIS WASTE DISPOSAL, INC., SITE Santa Fe Springs, California Report 1 - Hazardous Waste Site Characterization, Main Site

EPA Region 9



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AERIAL PHOTOGRAPHIC ANALYSIS
WASTE DISPOSAL, INC., SITE

Santa Fe Springs, California

Report 1 - Hazardous Waste Site Characterization, Main Site

by

D. R. Williams
Environmental Services Division
Lockheed Environmental Systems & Technologies Co.
Las Vegas, Nevada 89119

Contract No. 68-C5-0065

Work Assignment Manager

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NATIONAL EXPOSURE RESEARCH LABORATORY
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This document has undergone a technical and quality control/assurance review and has been approved for publication by personnel of the U.S. Environmental Protection Agency, Office of Research and Development, Environmental Sciences Division, Landscape Ecology Branch at Las Vegas, Nevada. It is for internal Agency use and distribution only.

ABSTRACT

This report presents the results of an analysis of historical aerial photographs of the Waste Disposal, Inc., site located in Santa Fe Springs, California. A total of 36 sets (dates) of vertical and oblique black-and-white historical photographs spanning the years from 1922 to 1968 were analyzed to produce this report. Of the 36 sets, thirteen sets of aerial photographs (from 1927 to 1968) were used to produce this report. Environmentally significant waste-disposal-related features such as stains, standing liquid, fill, light- and dark-toned material, solid waste, road networks, waste disposal points, and site access were identified. The purpose of this analysis (the first of two reports) is to provide remote sensing support to field investigations in Region 9 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The second report presents a more detailed analysis of land parcels that are present at the Waste Disposal, Inc., site. It also attempts to ascertain if standing liquids, stains, or other similar features were removed from the reservoir in 1951 or any other year within the study period.

The results of this analysis are depicted on overlays to site maps and selected aerial photographs. To aid in the detailed discussion of the analysis, the site was partitioned into six "subareas." By 1923 a large oil reservoir had been constructed. In 1927 no significant features were observed within the oil reservoir, but standing liquid and moist fill were present in the Earthen-Diked Subarea. By 1928 standing liquid, liquid sheen, and stains were present within the Southwest Subarea. In 1937 waste disposal activity had increased around the reservoir with dark-toned standing liquid, stains, and a series of four impoundments observed. The site appeared relatively inactive in 1945 and 1949, although standing liquid and some excavation of filled impoundments were observed.

By February of 1951, deposits of fill, standing liquid, and dark-toned material were present within the Earthen Diked Subarea. By 1955 the oil reservoir berm had been breached at three locations and wastes were deposited into the Earthen-Diked Area from roads leading to the breach locations. All

four impoundments in the Southeast Subarea had been filled and graded by 1955 and deposits of fill and solid waste were evident in the eastern corner of the site. Landfarming was also observed in the Southwest Subarea. Stains, standing liquid, and drums were observed in land parcels near the western corner of the site from 1955 through 1968. In 1959 a small ditch with dark stains appeared to originate from parcel 4 (western corner of the site) and flow in a northeasterly direction. In 1956, 1958, and 1959 liquid and solid wastes continued to be placed inside the reservoir and the Earthen-Diked Subarea. Also from 1956 to 1959 landfarming, standing liquid, staining, and migration of liquid wastes toward Greenleaf Avenue were seen in the Southeast Subarea. Accumulation of wastes within the Northwest Subarea continued from 1956 through 1959. By 1959 the reservoir had been partially filled.

From 1962 to 1968 the Oil Reservoir and Earthen Diked Subareas were completely filled. In 1962 and 1963 standing liquid and staining were noted in the northeast portion of the Earthen Diked Subarea. In 1962 standing liquid was also observed on adjacent property northeast of the site and near St. Paul's Catholic School property.

The U.S. Environmental Protection Agency (EPA), Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 9 Superfund Division in San Francisco, California, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

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INTRODUCTION

This report presents the results of an analysis of historical aerial photographs of the Waste Disposal, Inc., site (CERCLIS ID# CAD980884357) located in Santa Fe Springs, California. A total of 36 sets (dates) of black-and-white historical photographs spanning the years from 1922 to 1968 were analyzed. Of the 36 sets, thirteen sets of aerial photographs from 1927 to 1968 were used to produce this report. The purpose of this report is to provide remote sensing support for field investigations in Region 9 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The Waste Disposal, Inc., site is approximately 17.4 hectares (43.0 acres) in extent and is located in the town of Santa Fe Springs, California (Figures 1 and 2). General surficial drainage at the site flows from northwest to southeast. The Waste Disposal, Inc., site has many environmentally significant features that changed through time. To aid in a discussion of these features and changes, the site is divided into "subareas" (see Figure 3 for subarea boundaries). The oil reservoir in the central portion of the site is identified as the Oil Reservoir Subarea. When references are made to features and changes seen within the reservoir, they are grouped under the "Oil Reservoir Subarea" heading. Outside the oil reservoir berm is a large rectangular earthen dike. The area between the reservoir berm and the earthen dike is the Earthen-Diked Subarea. The remainder of the site is divided into the Southeast, Southwest, Northeast, and Northwest subareas.

A Waste Disposal, Inc., site map provided by EPA Region 9 (EPA 1998) is used to depict the photo analysis data derived from each set (date) of photographs (Figures 3 through 15).

The data for each set (date) of photographs are depicted on two overlays of the site map, the Waste-Disposal-Related Features Overlay and the Road Network and Disposal Points Overlay. Features on the Waste-Disposal-Related Features Overlay are logically grouped by color (red for solid waste, stains, fill, light- and dark-toned material, excavations, and graded areas, and blue for surface drainage, standing liquid, and other related features, e. g., sun

glint and moist fill (see Glossary for definitions). The areal extent (hectares/acres) of each standing liquid polygon is presented adjacent to each polygon on the overlays. Road networks and waste disposal points seen on the Road Network and Disposal Points Overlay are depicted in black. Narrative text describing the features and changes for each overlay appears in the textual portion of the report. Four photographs (Figures 16 through 19) and associated overlays are included in the report as examples of the different features and changes observed at the site. On Figures 16 through 19 the Road Network and Disposal Points Overlay also includes extent of study area, subareas, and land parcels. Figures 20 and 21 depict tankers observed near the western corner of the Earthen-Diked Subarea in February and July of 1951, respectively.

Results of the analysis reveal that construction of the oil reservoir was apparently completed sometime in 1923 (photo not included in the report). By 1927 the site appears operational and standing liquid and moist fill were observed. By 1928 standing liquid was seen within the Earthen-Diked Subarea and in the Southwest Subarea. The oil reservoir itself was covered in 1937, but standing liquid was evident within the Earthen-Diked Subarea and in the Southeast and Southwest Subareas. Four impoundments were present in the Southwest Subarea. In 1945 the site appeared inactive with vegetation covering the Southeast and Southwest Subareas.


By 1951 the reservoir and the Earthen Diked-Subarea were filled with standing liquid. A new road network had been established leading to the Earthen-Diked Subarea where waste disposal activity was observed. Spillage was noted near these locations (termed waste disposal points). Small stained drainage channels originating in Land Parcel 3 (western corner of the site) trended to the northeast. Tanker trucks were also observed at Parcel 3. By 1955 the reservoir berm had been breached in three places and waste materials had been placed in the reservoir from these locations. Large deposits of fill, solid waste, and dark-toned material were seen in the Southeast Subarea. Landfarming was evident in the Southwest Subarea. Drums, stains, and standing liquid were present to the northeast. Wastes continued to be deposited in the reservoir in 1956 and 1958. In 1956 liquid waste flowed in a southeasterly direction from a landfarming area in the eastern corner of the site into a drainageway along Greenleaf Avenue and also into an adjacent property*. In

1956, 1958, and 1959, a drainageway, probably originating from the reservoir, flowed to the southeast; staining was noted along this drainageway. Landfarming continued in the Southwest Subarea in 1956 and 1958. In 1958 spillage from an opening in the reservoir berm flowed into the landfarming area. In 1959 a pipeline from the reservoir to the landfarming area leaked and staining and standing liquid were observed. Backfilling of the reservoir with wastes continued from 1959 through 1968. From 1951 to 1968 drums, stains, and standing liquid were seen in the land parcels in the western corner of the site. In 1959 a ditch apparently originating within Parcel 4 had dark stains. Apparent disposal of dark-toned wastes was evident at Parcel 7 located in the northern corner of the site.

By 1962 the reservoir was almost completely filled and standing liquid and stains were present within the former Oil Reservoir and Earthen-Diked Subareas. Standing liquid was also present northeast of the site and adjacent to St. Paul's Catholic School Property*. Resolution of the 1962 photographs was low, but standing liquid was observed adjacent to Parcel 4. By 1963 the reservoir continued to be filled. Staining was again observed within the former Oil Reservoir and Earthen-Diked Subareas. Staining was seen northeast of the site on an adjacent property. Standing liquid was again observed adjacent to Parcel 4 and staining was seen in Parcel 24. By 1968 filling of the Oil Reservoir and Earthen-Diked Subareas had apparently been completed. In 1968 standing liquid and staining were seen in the western corner of the site and also south of the former reservoir.

A glossary, defining features or conditions identified in this report, follows the analysis section. Sources for all maps, aerial photographs, and collateral data used in the production of this report are listed in the References section. A list of all aerial photographs that were identified and evaluated for potential application to this study can be obtained by contacting the EPA Work Assignment Manager. Selected historical aerial photographs used in the analysis of this site have been digitally scanned and printed for use in this report. Transparent overlays with interpretative data are affixed to each of the digital prints. See the Methodology section for a discussion of the scanning and printing procedures.

The U.S. Environmental Protection Agency (EPA), Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 9 Superfund Division in San Francisco, California, and the EPA Office of Emergency and Remedial Response in Washington, D.C.



UNITED STATES
(1972)

Figure 1. Study area location map, California (USGS 1972). Approximate scale 1:4,500,000.

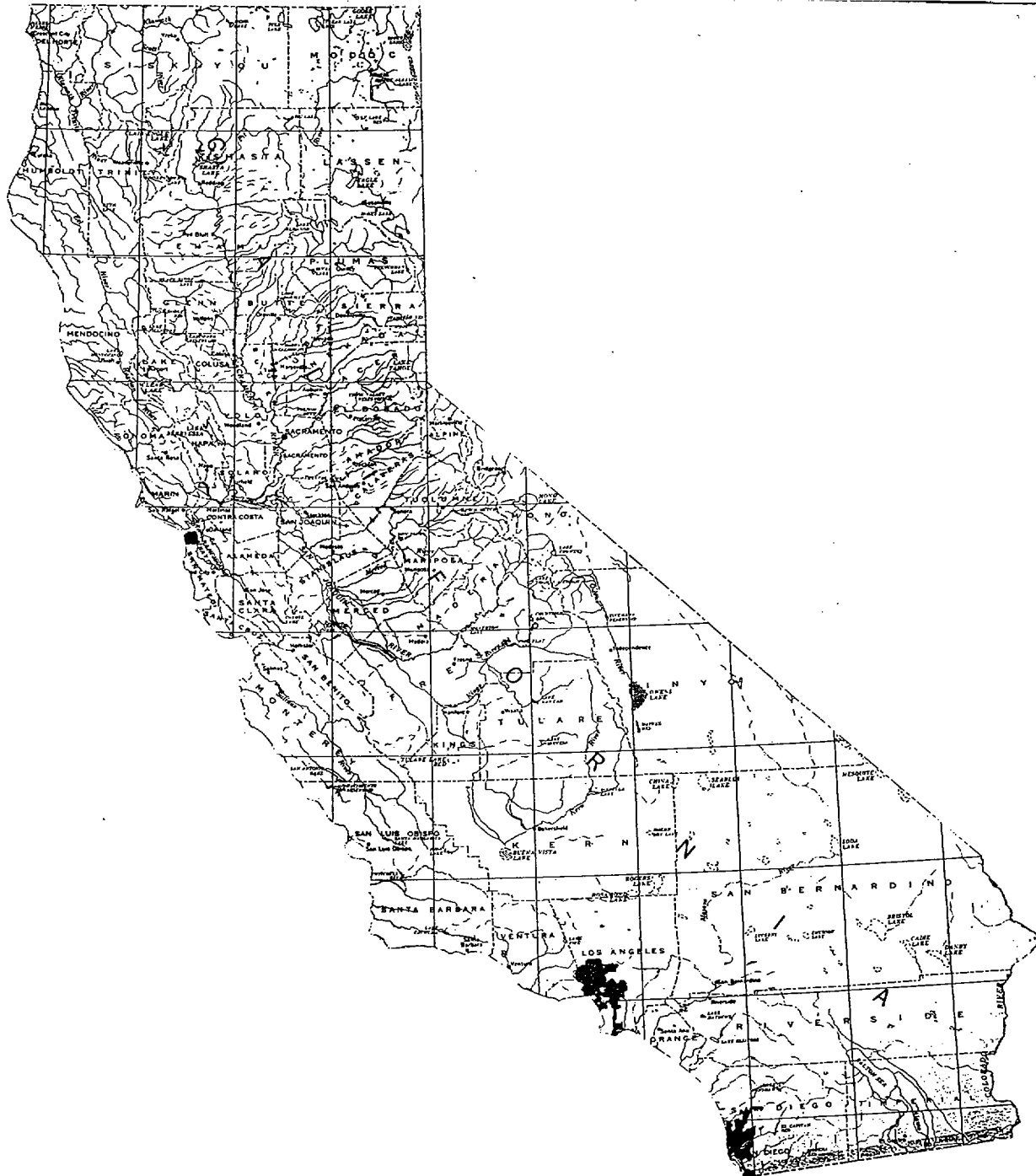


Figure 1. Study area location map, California (USGS 1972). Approximate scale 1:4,500,000.

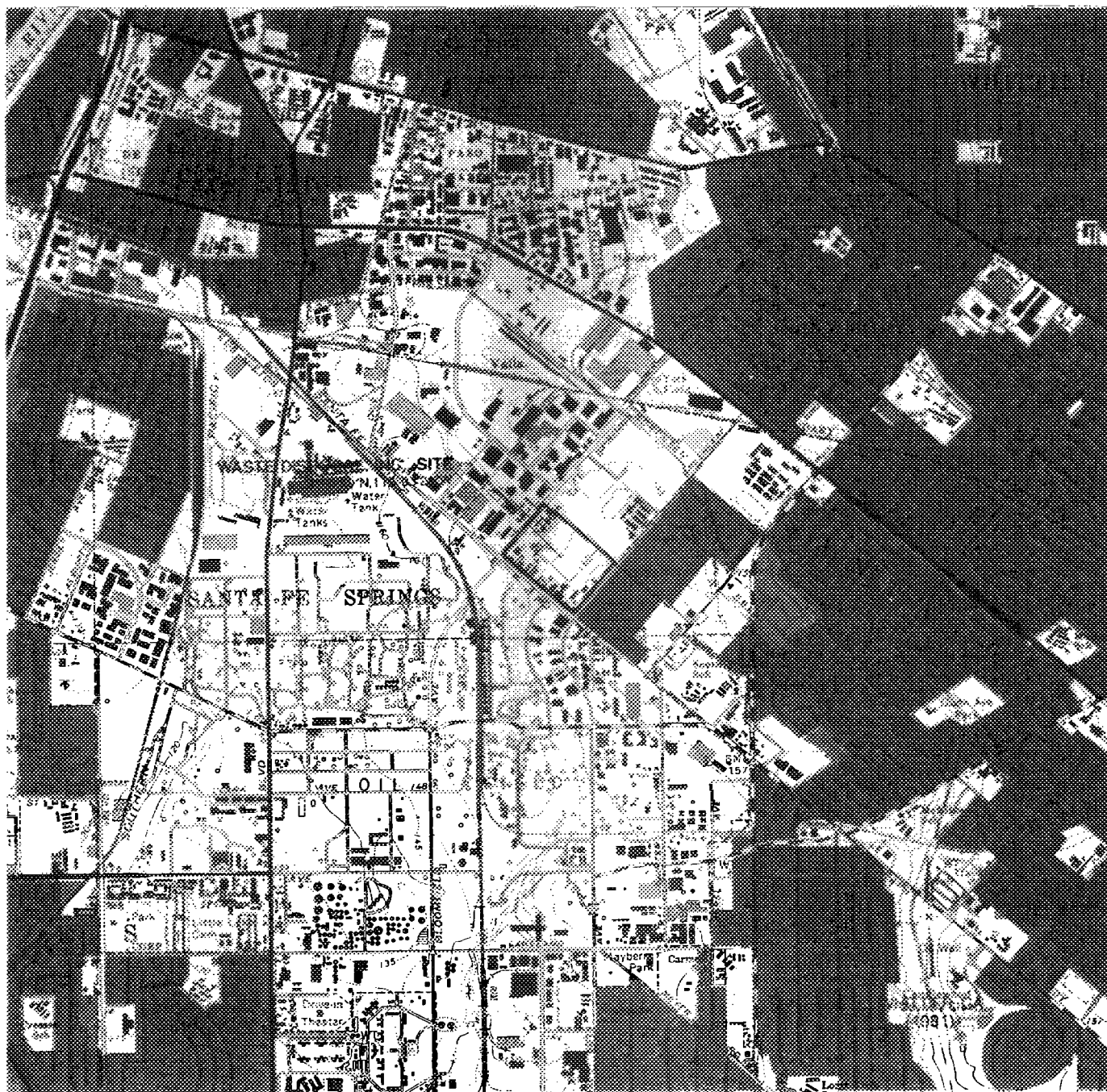


Figure 2. Local study area location map, Whittier, California (USGS 1981).
Scale 1:24,000.

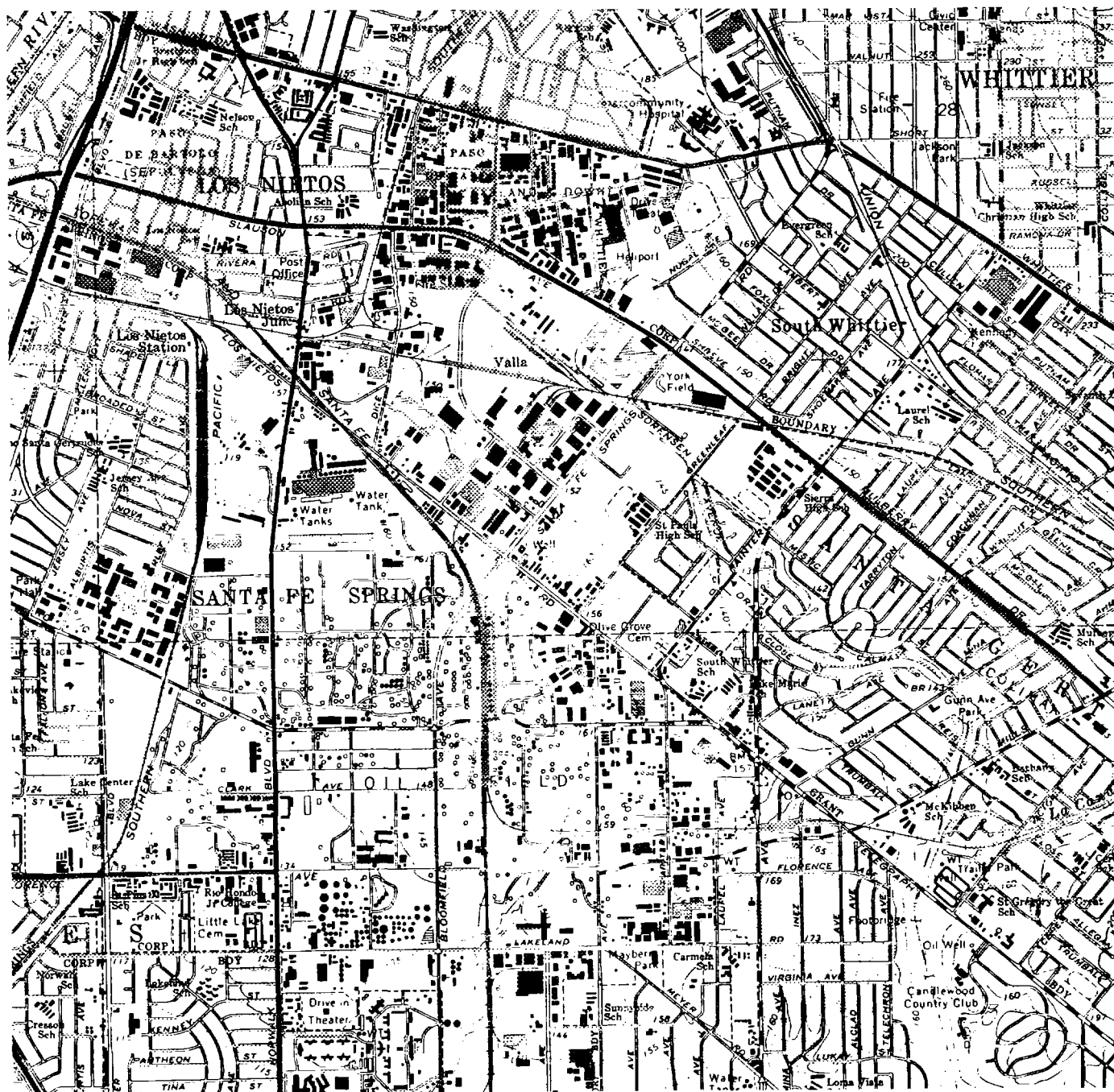


Figure 2. Local study area location map, Whittier, California (USGS 1981).
Scale 1:24,000.

METHODOLOGY

This report was prepared using a standard methodology that includes the following steps:

- data identification and acquisition,
- photographic analysis and interpretation, and
- graphics and text preparation.

These steps are described below. Subsections also address details related to specific kinds of analyses that may be required to identify environmental features such as surface drainage and wetlands. All operational steps and processes used to perform this work (including data identification and acquisition, photographic analysis and interpretation, and graphics and text preparation) adhere to strict QA/QC guidelines and standard operating procedures (SOPs). These guidelines and procedures are documented in the Master Quality Assurance Project Plan (QAPP) prepared for Remote Sensing Technical Support Contract No. 68-C5-0065 (LESAT 1998).

Data identification and acquisition included a search of government and commercial sources of historical aerial film for the study area. Photographs with optimal spatial and temporal resolution and image quality were identified for acquisition. In addition, U.S. Geological Survey (USGS) topographic maps were obtained to show the study area location and to provide geographic and topographic context.

To conduct this analysis, the analyst examined diapositives (transparencies) of historical aerial photographs showing the study area. Diapositives are most often used for analysis instead of prints because the diapositives have superior photographic resolution. They show minute details of significant environmental features that may not be discernible on a paper print.

A photographic analyst uses a stereoscope to view adjacent, overlapping pairs of diapositives on a backlit light table. In most cases, the stereoscope is capable of various magnifications up to 60 power. Stereoscopic

viewing involves using the principle of parallax (observing a feature from slightly different positions) to observe a three-dimensional representation of the area of interest. The stereoscope enhances the photo interpretation process by allowing the analyst to observe vertical as well as horizontal spatial relationships of natural and cultural features.

The process of photographic analysis involves the visual examination and comparison of many components of the photographic image. These components include shadow, tone, color, texture, shape, size, pattern, and landscape context of individual elements of a photograph. The photo analyst identifies objects, features, and "signatures" associated with specific environmental conditions or events. The term "signature" refers to a combination of components or characteristics that indicate a specific object, condition, or pattern of environmental significance. The academic and professional training, photo interpretation experience gained through repetitive observations of similar features or activities, and deductive logic of the analyst as well as background information from collateral sources (e.g., site maps, geologic reports, soil surveys) are critical factors employed in the photographic analysis.

The analyst records the results of the analysis by using a standard set of annotations and terminology to identify objects and features observed on the diapositives. Significant findings are annotated on overlays attached to the photographic or computer reproduced prints in the report and discussed in the accompanying text. Annotations that are self-explanatory may not be discussed in the text. The annotations are defined in the legend that accompanies each print and in the text when first used.

Objects and features are identified in the graphics and text according to the analyst's degree of confidence in the evidence. A distinction is made between certain, probable, and possible identifications. When the analyst believes the identification is unmistakable (certain), no qualifier is used. Probable is used when a limited number of discernible characteristics allow the analyst to be reasonably sure of a particular identification. Possible is used when only a few characteristics are discernible, and the analyst can only infer an identification.

The prints in this report have been reproduced, either by photographic or computer methods, from the original film. Reproductions are made from the original film and may be either contact (the same size) prints or enlargements, depending on the scale of the original film. Any computer-produced prints used in this report are generated from scans of the film at approximately 1,300 dots per inch (dpi) and printed at 720 dpi. Although the reproductions allow effective display of the interpretive annotations, they may have less photographic resolution than the original film. Therefore, some of the objects and features identified in the original image and described in the text may not be as clearly discernible on the prints in this report.

Study area boundaries shown in this report were determined from aerial photographs or collateral data and do not denote legal property lines or ownership.

Surface Drainage

The surface drainage analysis produced for this report identifies the direction and potential path that a liquid spill or surface runoff would follow based on the topography of the terrain and the presence of discernible obstacles to surface flow. The analyst determines the direction of surface drainage by stereoscopic analysis of the aerial photographs and by examining USGS topographic maps. Site-specific surface drainage patterns are annotated on the map or photo overlay. Where the direction of subtle drainage cannot be determined, an indeterminate drainage line symbol is used. Regional surface flow is ascertained from the USGS topographic maps.

Area Measurements

Before area measurements of standing liquid were accomplished, each scanned digital aerial photographic image was registered and rectified. Image-to-image registration and second order polynomial warp utilizing image processing software was performed using the Whittier, California, USGS 7.5' topographic quadrangle (1981; NAD83, units = meters). Each feature to be measured was first digitized by rendering it as a polygon shape on a digital overlay to the digital aerial photographic image. Area measurements were

calculated using digital software, each polygon shape was recorded in square meters. Due to the transcription of units from square meters to hectares a precision of 0.1 hectare was used.

PHOTO ANALYSIS

Due to the complexity of waste disposal activities observed at the Waste Disposal, Inc., site, the site is divided into "subareas" (see Figure 3 for subarea boundaries). The Oil Reservoir, present within the central portion of the site, is the "Oil Reservoir Subarea." Thus, the references made to features and changes seen within the reservoir are placed under that heading. A berm encompasses the reservoir; outside of the berm is a large rectangular earthen dike. The area between the reservoir berm and the earthen dike is the Earthen-Diked Subarea. The remainder of the site is divided into Southeast, Southwest, Northeast, and Northwest subareas. Features referenced in the background material are cited in the text that accompanies each analysis. When they first appear in the text these features are denoted with an asterisk (*). They are also denoted with an asterisk each time they appear on the site map overlays.

1927 (FIGURE 3)

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

An oblique aerial photograph (see references) in June of 1923 shows that construction of the oil reservoir is apparently complete. In 1927 no significant features are observed within the reservoir.

Earthen-Diked Subarea

In 1927, standing liquid (SL) and moist fill are present within the Earthen-Diked Subarea outside of the reservoir.

Road Network and Disposal Points Overlay

By 1927 a site road network had been established around the Earthen-Diked Subarea. Access roads lead onto the southern, western, and northern sections of the site.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

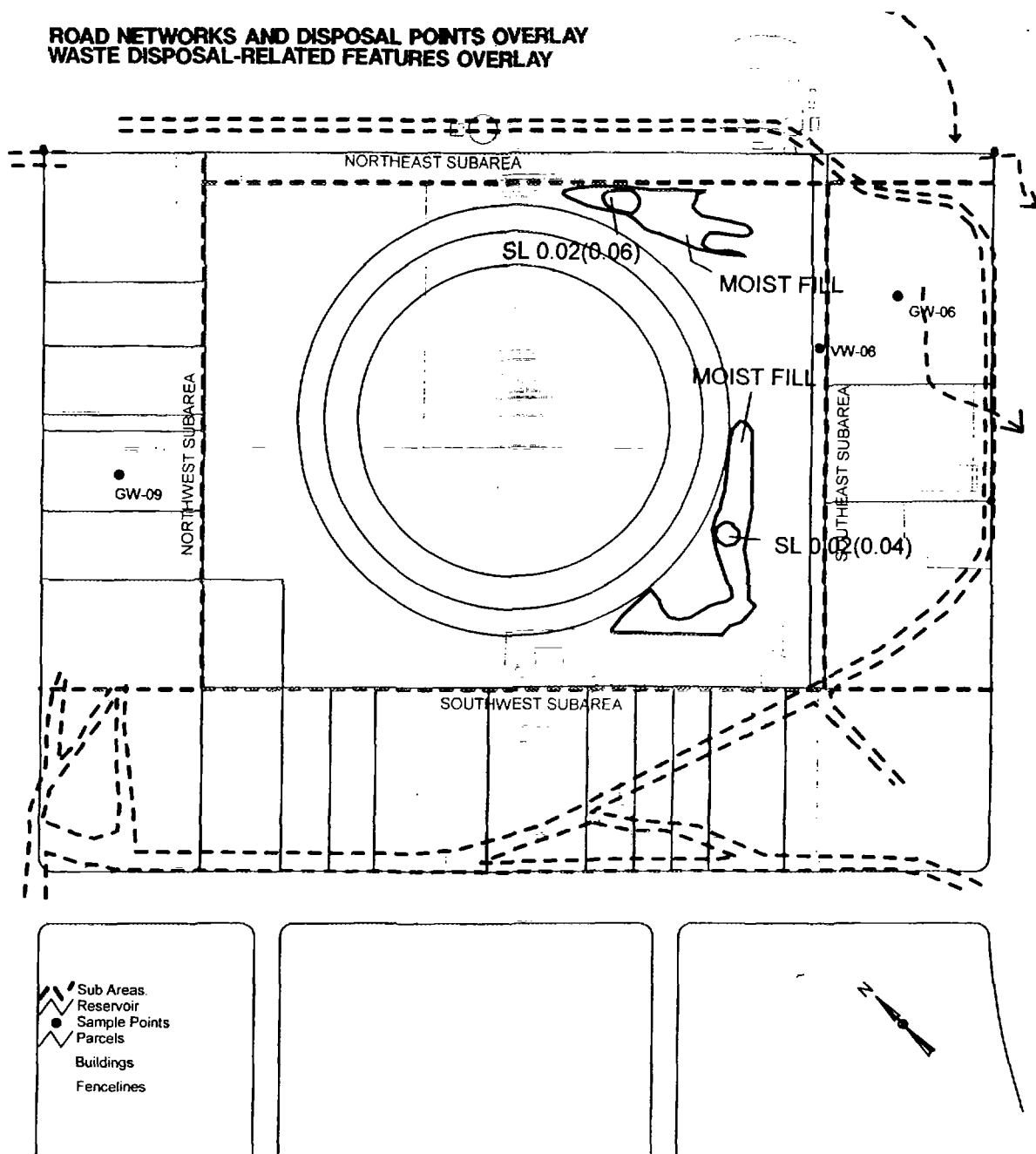


Figure 3. Waste Disposal, Inc., Site map, 1927. Approximate scale 1:3,850.

WASTE DISPOSAL-RELATED FEATURES OVERLAY

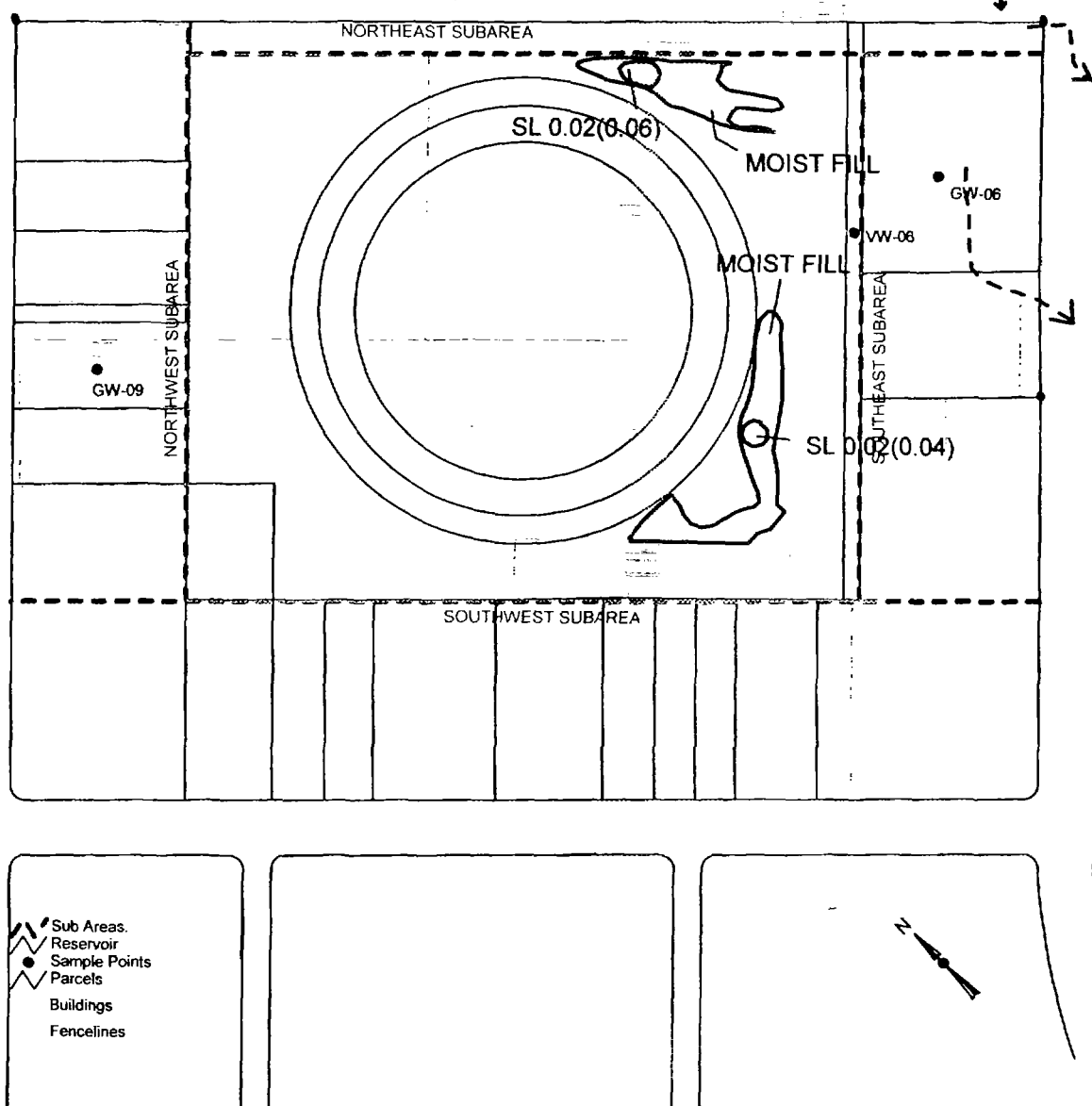


Figure 3. Waste Disposal, Inc., site map, 1927. Approximate scale 1:3,850.

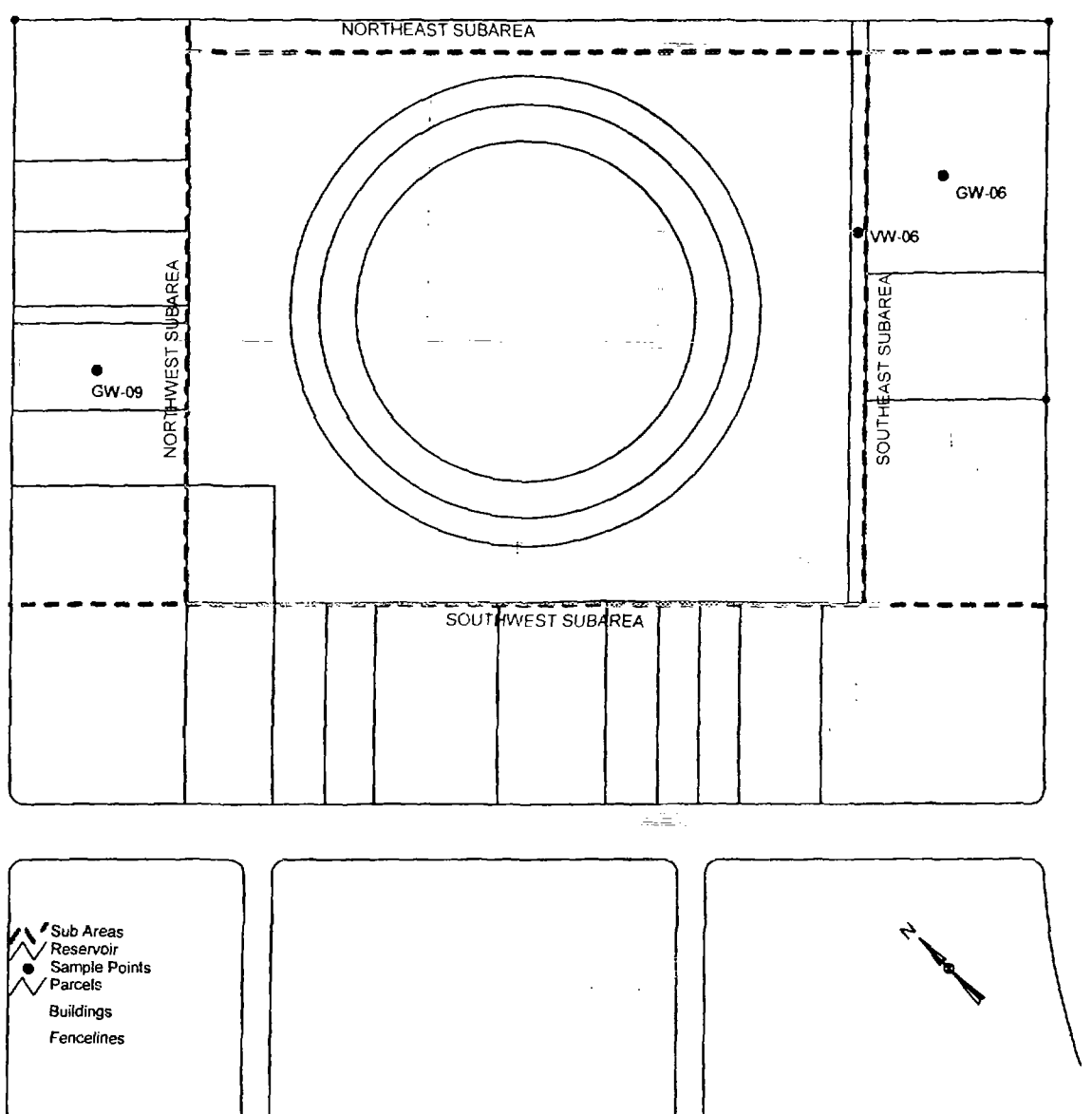


Figure 3. Waste Disposal, Inc., site map, 1927. Approximate scale 1:3,850.

1928 (FIGURE 4)

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

No environmentally significant features are seen within the Oil Reservoir Subarea.

Earthen-Diked Subarea

Sun glint (SG), caused by direct reflection of the sun from very shallow areas of standing liquid, is visible within the subarea. Four areas of standing liquid are also noted.

Southeast and Southwest Subareas

Two small excavations are present in the Southeast Subarea. In the Southwest Subarea a large area of standing liquid is seen adjacent to the earthen dike and sun glint is seen to the south and southwest. Judging from the orientation of the sun glint areas, liquid wastes have been deposited near Los Nietos Road and have probably flowed into the large area of standing liquid. A revegetated impoundment and a small pit are observed in the western corner of the site.

Northwest and Northeast Subareas

This area does not appear to be used for waste disposal. One area of standing liquid is present outside the earthen dike. One standing liquid area is present outside of the Earthen-Diked Subarea in the Northeast Subarea.

Road Network and Disposal Points Overlay

An extensive road network with three waste disposal points has been established since 1927. Liquid wastes have probably been deposited at the disposal point in the Southeast Subarea. Two additional waste disposal points are seen in the Southwest Subarea. The site is accessed at the north and south corners and along the southwestern site perimeter.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

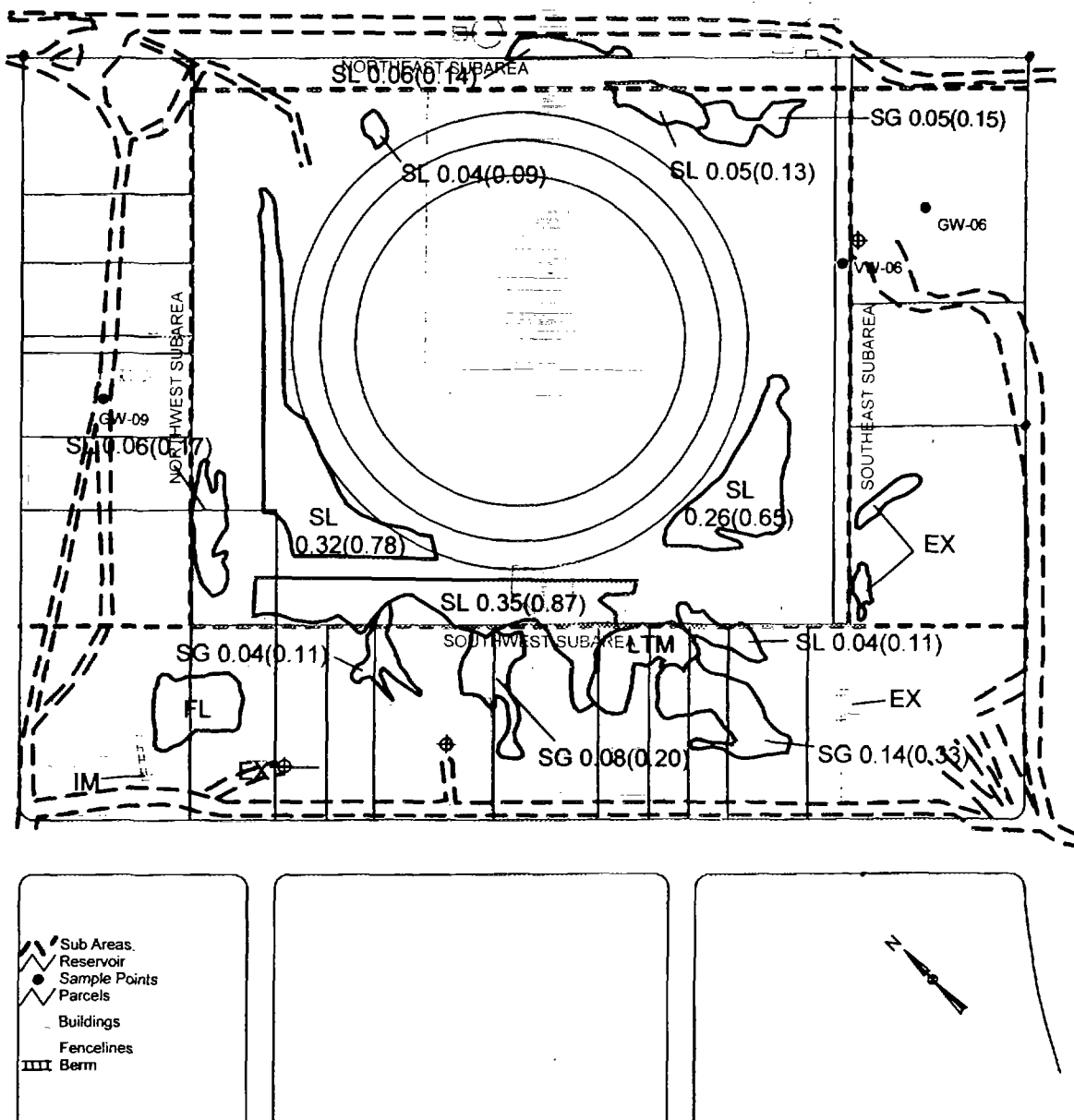


Figure 4. Waste Disposal, Inc., site map, 1928 Approximate scale 1:3,850.

WASTE DISPOSAL-RELATED FEATURES OVERLAY

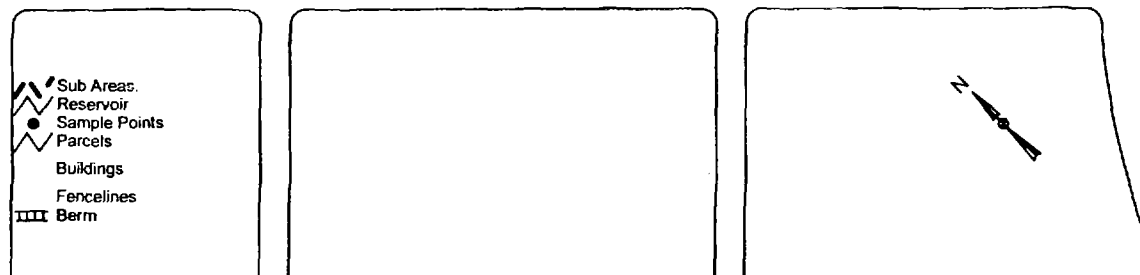
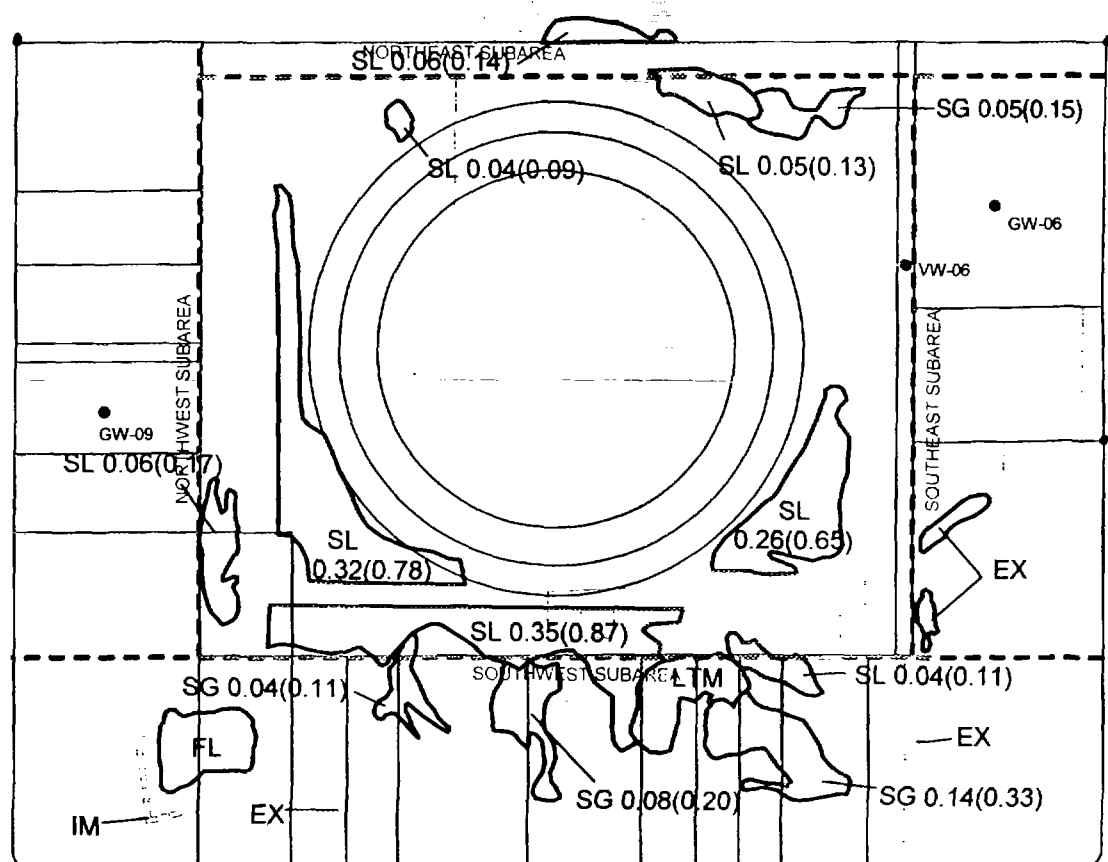


Figure 4. Waste Disposal, Inc., site map, 1928 Approximate scale 1:3,850.

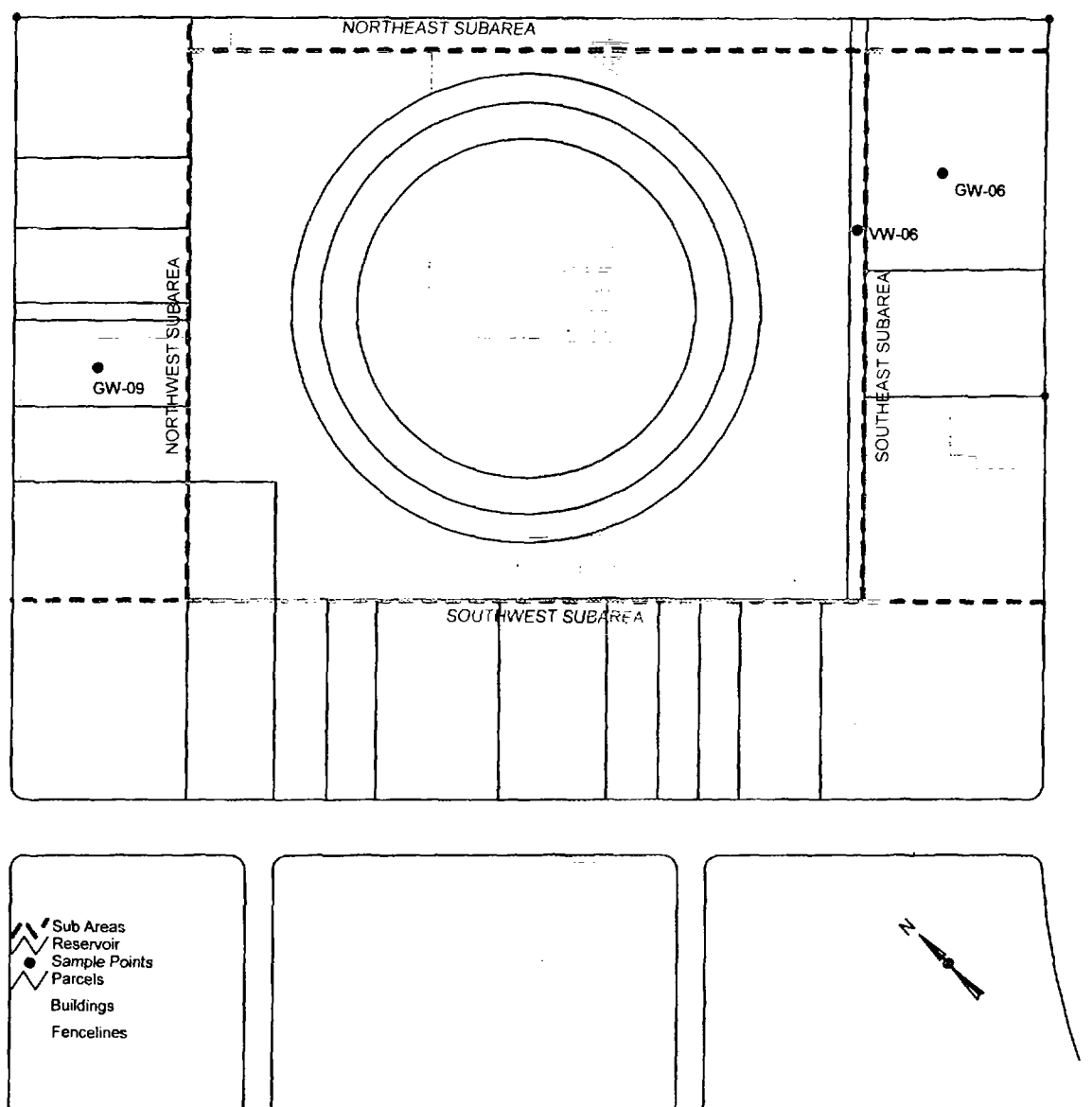


Figure 4. Waste Disposal, Inc., site map, 1928 Approximate scale 1:3,850.

FEBRUARY 20, 1937 (FIGURE 5)

Waste disposal continues at the site; since 1928 the most notable change is the construction of four large impoundments in the Southeast Subarea.

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

The oil reservoir is covered and no assessment of the contents is possible. A small channel is observed adjacent to the reservoir indicating the presence of a possible overflow drainageway into the Northeast Subarea of the site.

Earthen-Diked Subarea

Standing liquid is seen in the same general locations as observed in 1928. Standing liquid is now present in three of the four corners of this subarea.

Southeast Area

A series of four impoundments has been constructed in this subarea since 1933. An oblique aerial photograph taken in 1933 (see References) shows that no impoundments had been constructed at that time. In 1937, Impoundment 1 contains fill material and moist fill. A large area of turbid standing liquid is present in Impoundment 2 and dark-toned material (DTM) is seen nearby. Impoundment 3 also contains moist fill and surface drainage flows in a southeasterly direction atop the fill. A breach is present in the berm of Impoundment 2. Liquid materials have migrated from a similar breach in Impoundment 3 into a ditch along the adjacent access road. Impoundment 4 contains moist fill and standing liquid.

Southwest Subarea

Standing liquid continues to be present outside of the earthen dike. The waste disposal point located southwest of the large area of standing

liquid (1928) now appears to be in disuse. The relative height of fill around this point has increased since 1928 indicating probable additional disposal of wastes from this location.

Northwest and Northeast Subareas

In the Northwest Subarea a large area of turbid standing liquid is present. In the Northeast Subarea standing liquid is visible adjacent to the earthen dike. This liquid could have possibly flowed from the oil reservoir through the reservoir overflow drainageway.

Road Network and Disposal Points Overlay

Only one disposal point located near the eastern corner of the site was identified in 1937. The site is accessed from the northern, southern, and western corners.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

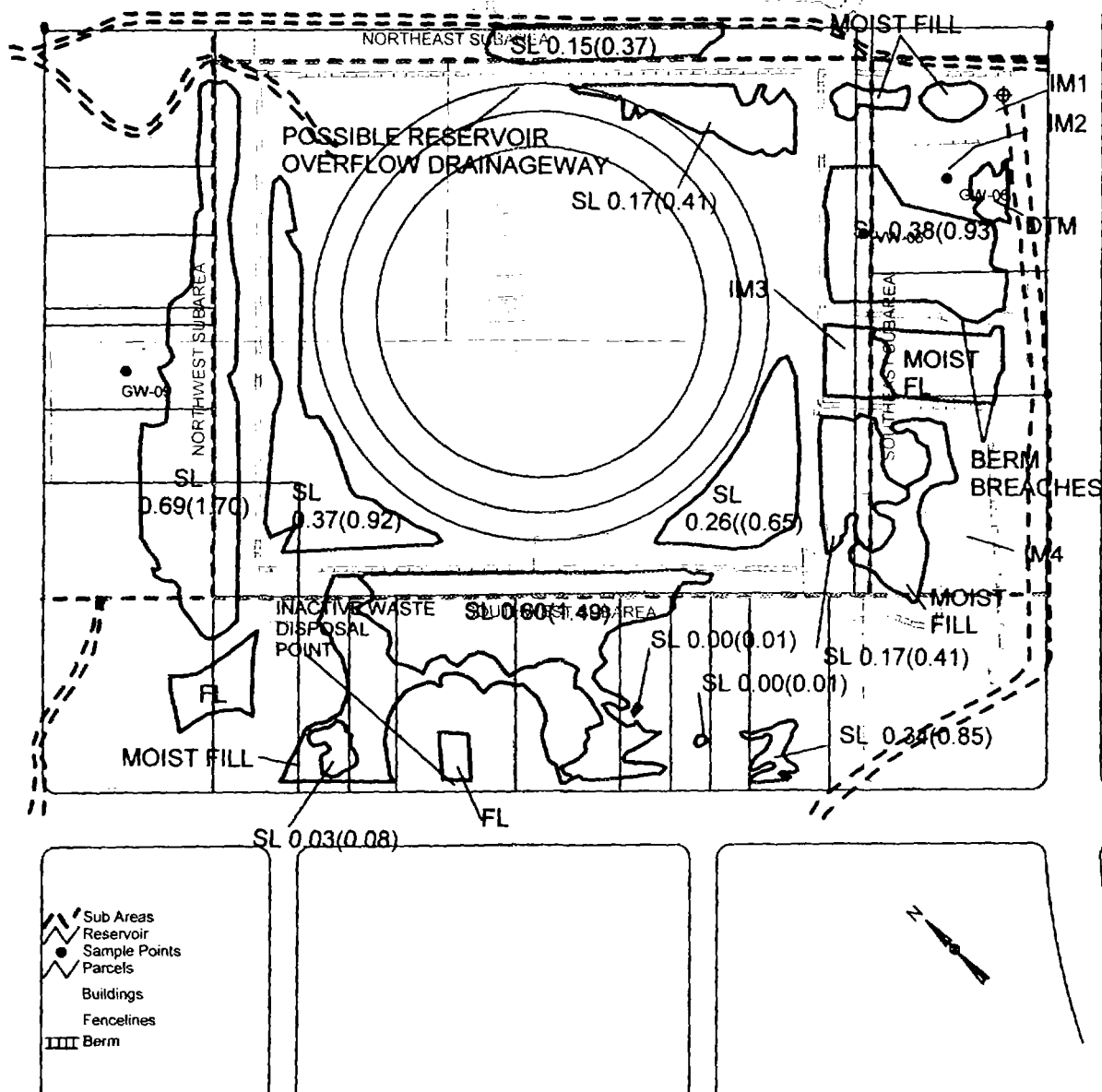


Figure 5. Waste Disposal, Inc., site map, February 20, 1937. Approximate scale 1:3,850.

WASTE DISPOSAL-RELATED FEATURES OVERLAY

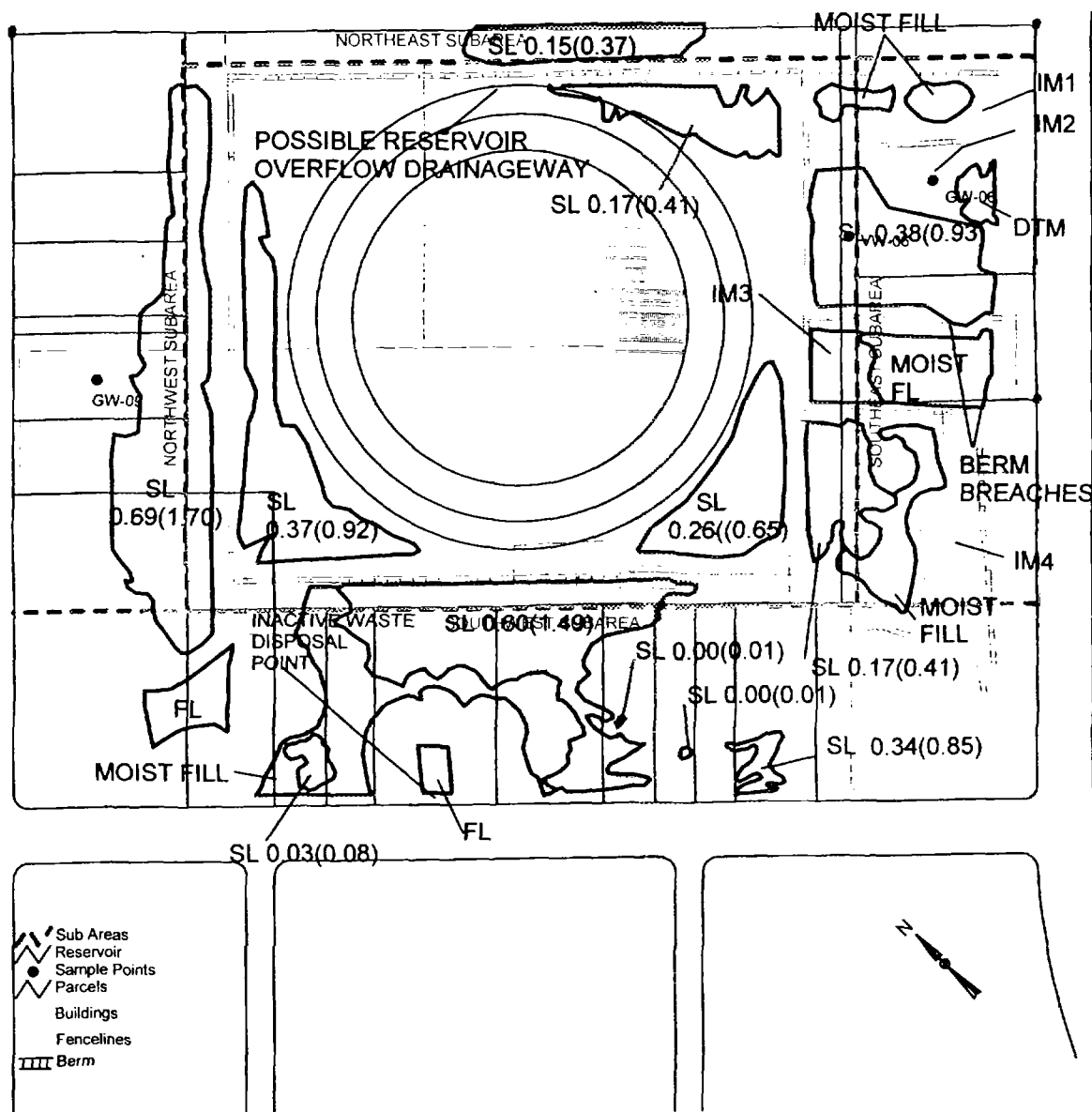


Figure 5. Waste Disposal, Inc., site map, February 20, 1937. Approximate scale 1:3,850.

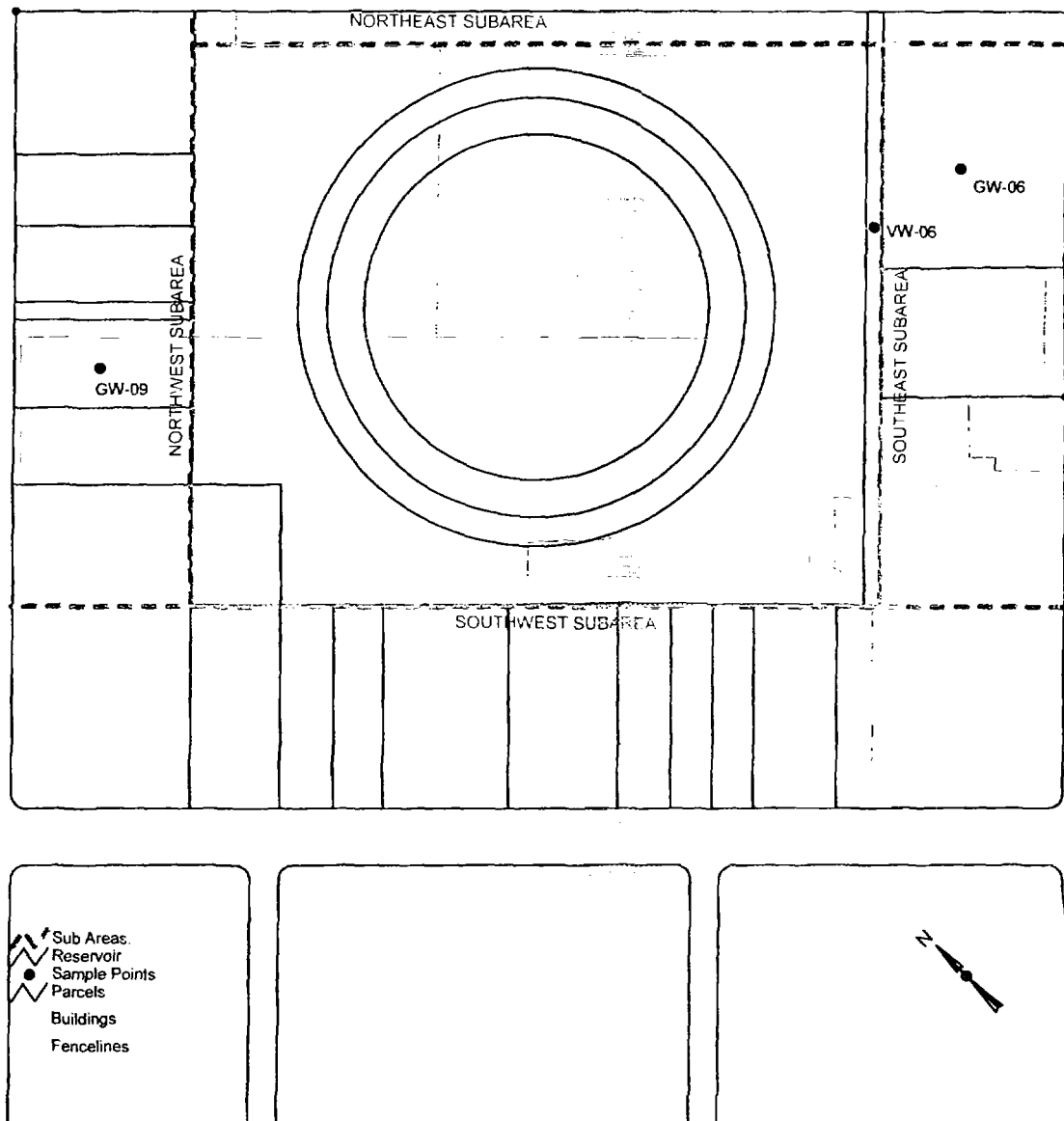


Figure 5. Waste Disposal, Inc., site map, February 20, 1937. Approximate scale 1:3,850.

JANUARY 1, 1945 (FIGURE 6)

The site appears to be inactive with some of the impoundments in the Southeast Subarea being covered with vegetation.

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

Standing liquid is present in the reservoir. A possible connection (pipeline) to another similar reservoir to the northwest is also noted.

Southeast Subarea

Impoundment 1 is completely covered with vegetation. A relatively recent deposition of light-toned material and a large stained area are visible in Impoundment 2. A berm has been breached at the northwestern side of Impoundment 2 that allows for a possible overflow of liquid from the Earthen-Diked Subarea to the impoundment. Impoundments 3 and 4 are inactive and covered with vegetation; however, the southeastern end of both impoundments has been partially excavated. A dark-stained area is seen next to the standing liquid present at the southern corner of the site. The dark-stained area appears to be a spillway where liquids are off-loaded from tankers. Since the staining within the spillway is dark-toned, the standing liquid is probably also dark-toned.

Southwest and Northwest Subareas

The entire area is partially covered with vegetation and is inactive. Moist fill is visible adjacent to the western corner of the Earthen-Diked Subarea.

Road Network and Disposal Points Overlay

No significant change is noted in the site access and access road located in this area;

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

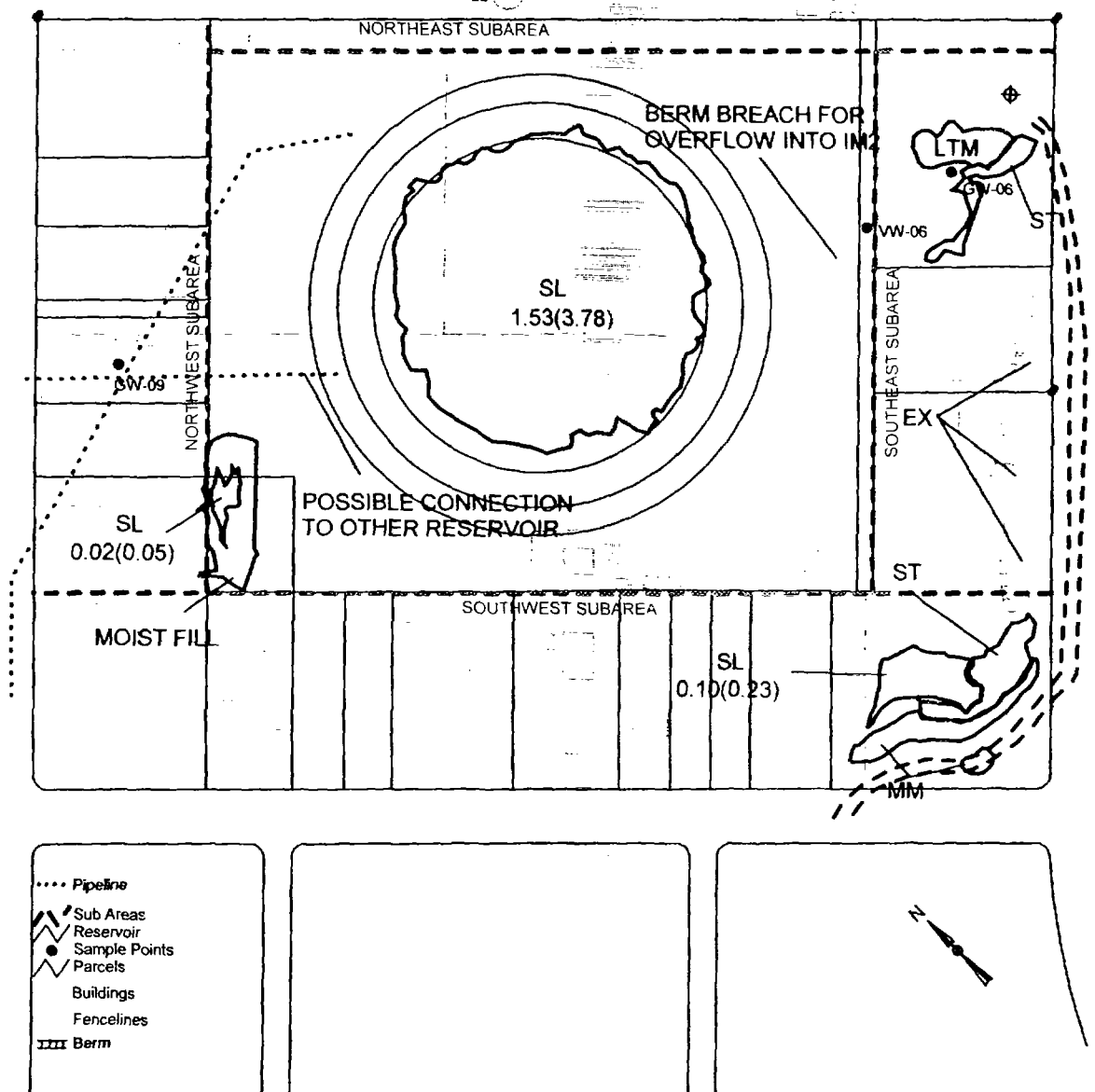


Figure 6. Waste Disposal, Inc., site map, January 1, 1945. Approximate scale 1:3,850.

WASTE DISPOSAL-RELATED FEATURES OVERLAY

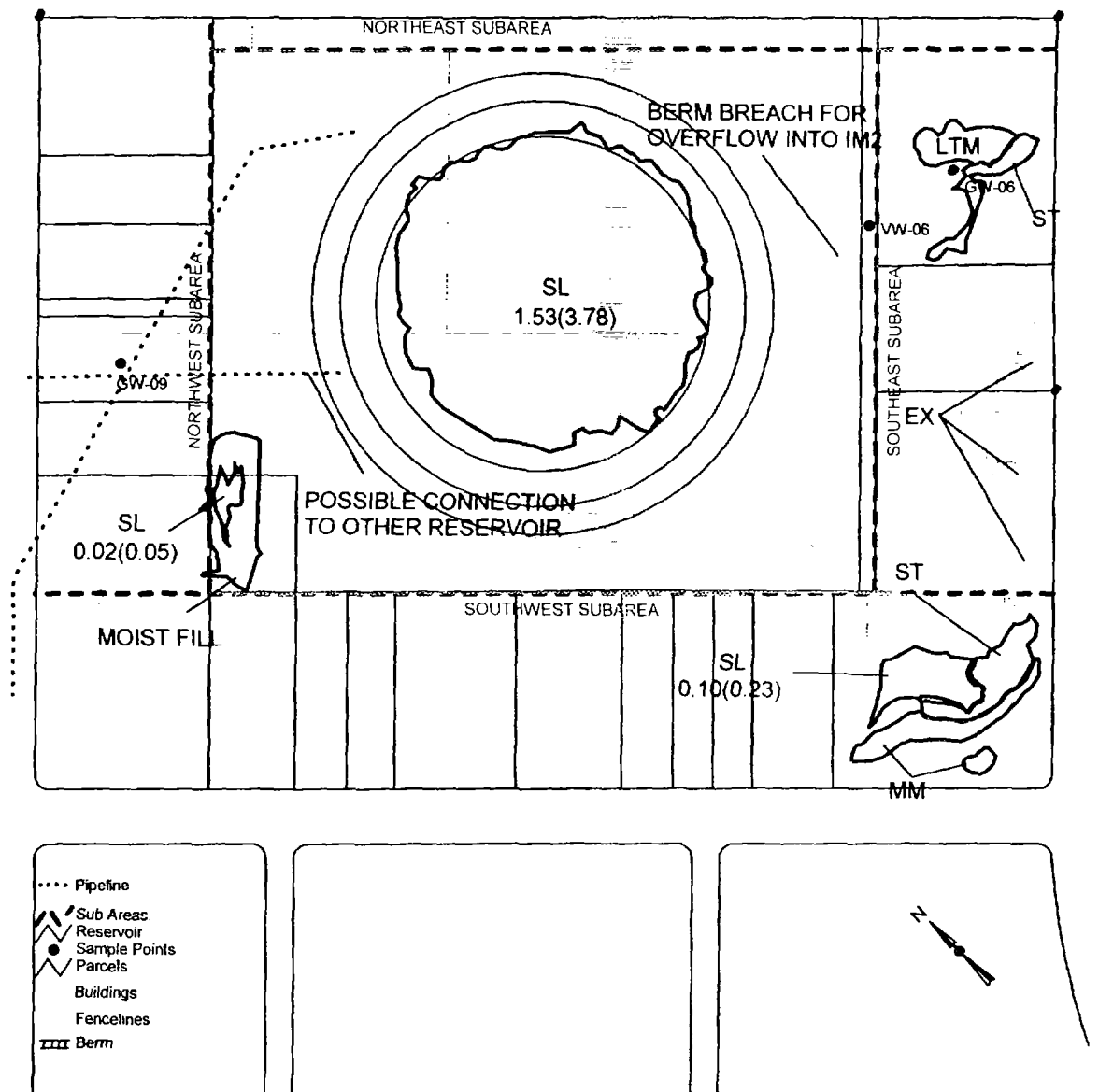


Figure 6. Waste Disposal, Inc., site map, January 1, 1945. Approximate scale 1:3,850.

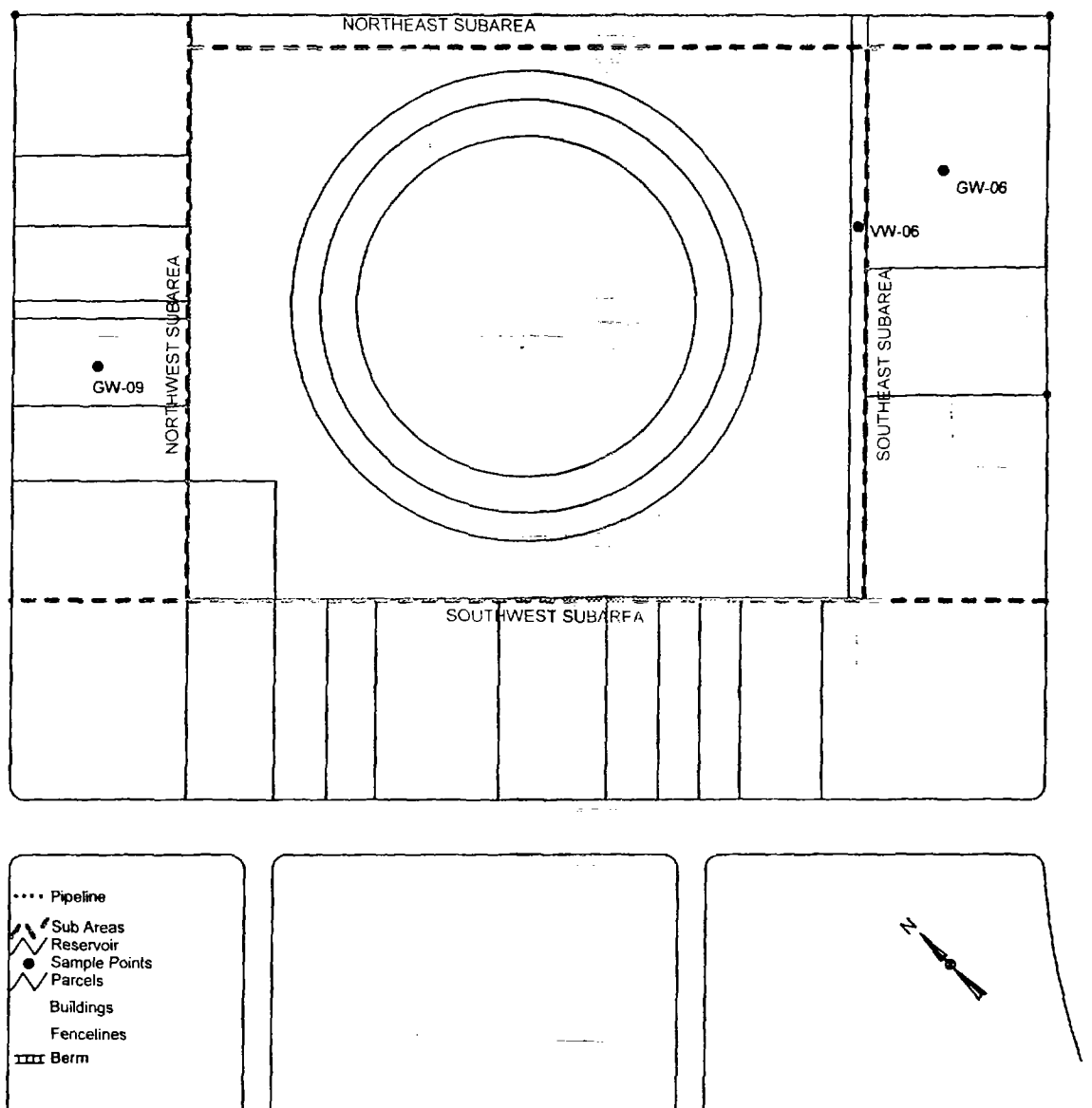


Figure 6. Waste Disposal, Inc., site map, January 1, 1945. Approximate scale 1:3,850.

FEBRUARY 16, 1949 (FIGURE 7)

The site continues to appear to be relatively inactive; however, some changes are apparent in the Southeast and Southwest Subareas.

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

Standing liquid is present within the reservoir.

Earthen-Diked Subarea

One area of standing liquid is visible within the earthen dike. There is a small breach in the earthen dike on the southwest side.

Southeast and Southwest Subareas

Moist fill is observed in Impoundment 1 and standing liquid is seen in Impoundment 2. Moist fill is present southeast of Impoundment 2 indicating a probable flow of liquids from the impoundment. To the southwest are two additional areas of standing liquid. Several new buildings are present in the western corner of the site. Three large areas of land have been graded, possibly in preparation for additional construction at the site.

Northwest Subarea

One area of standing liquid is present next to the earthen dike.

WASTE DISPOSAL-RELATED FEATURES OVERLAY

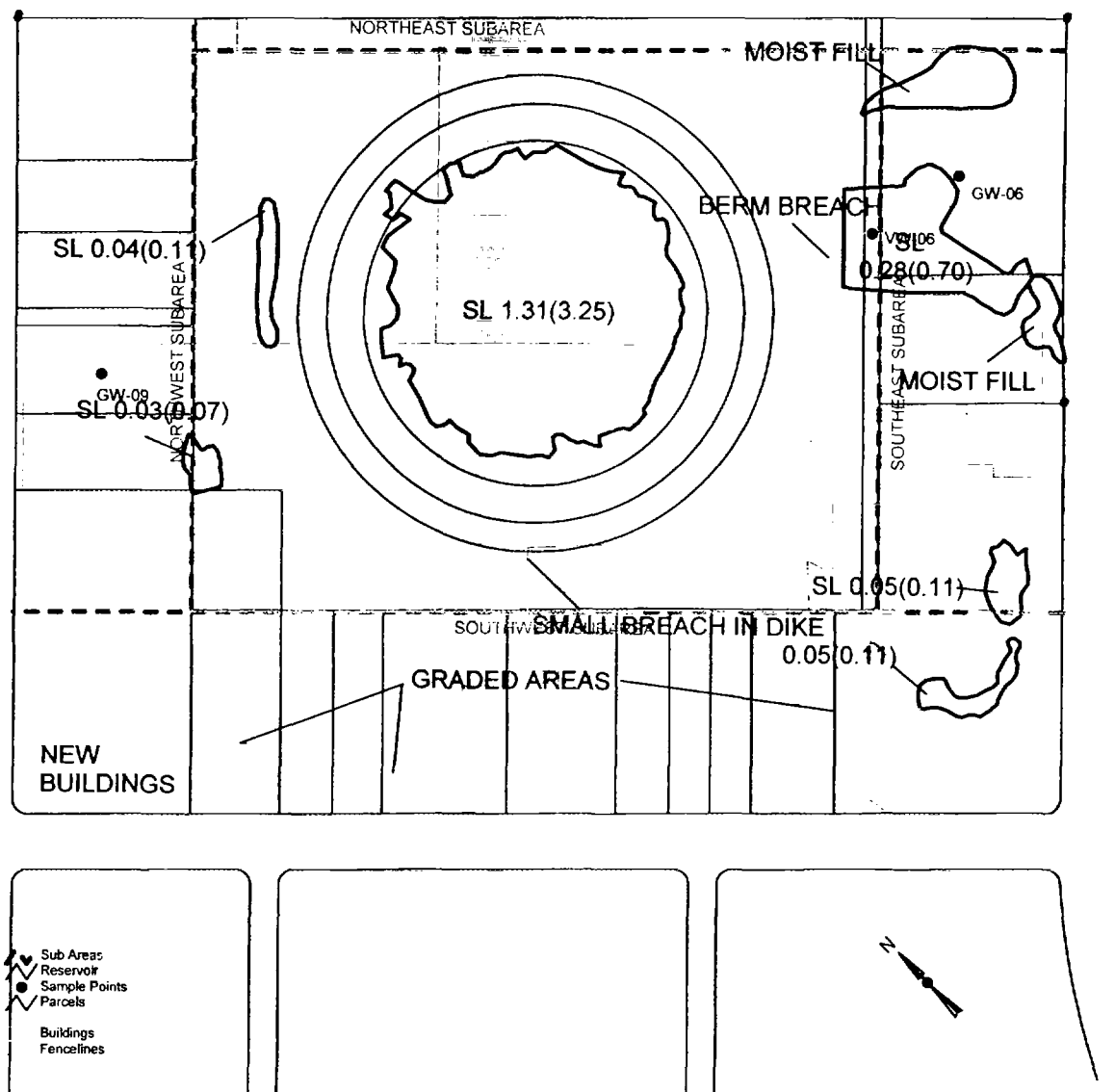


Figure 7. Waste Disposal, Inc., site map, February 16, 1949. Approximate scale 1:3,850.

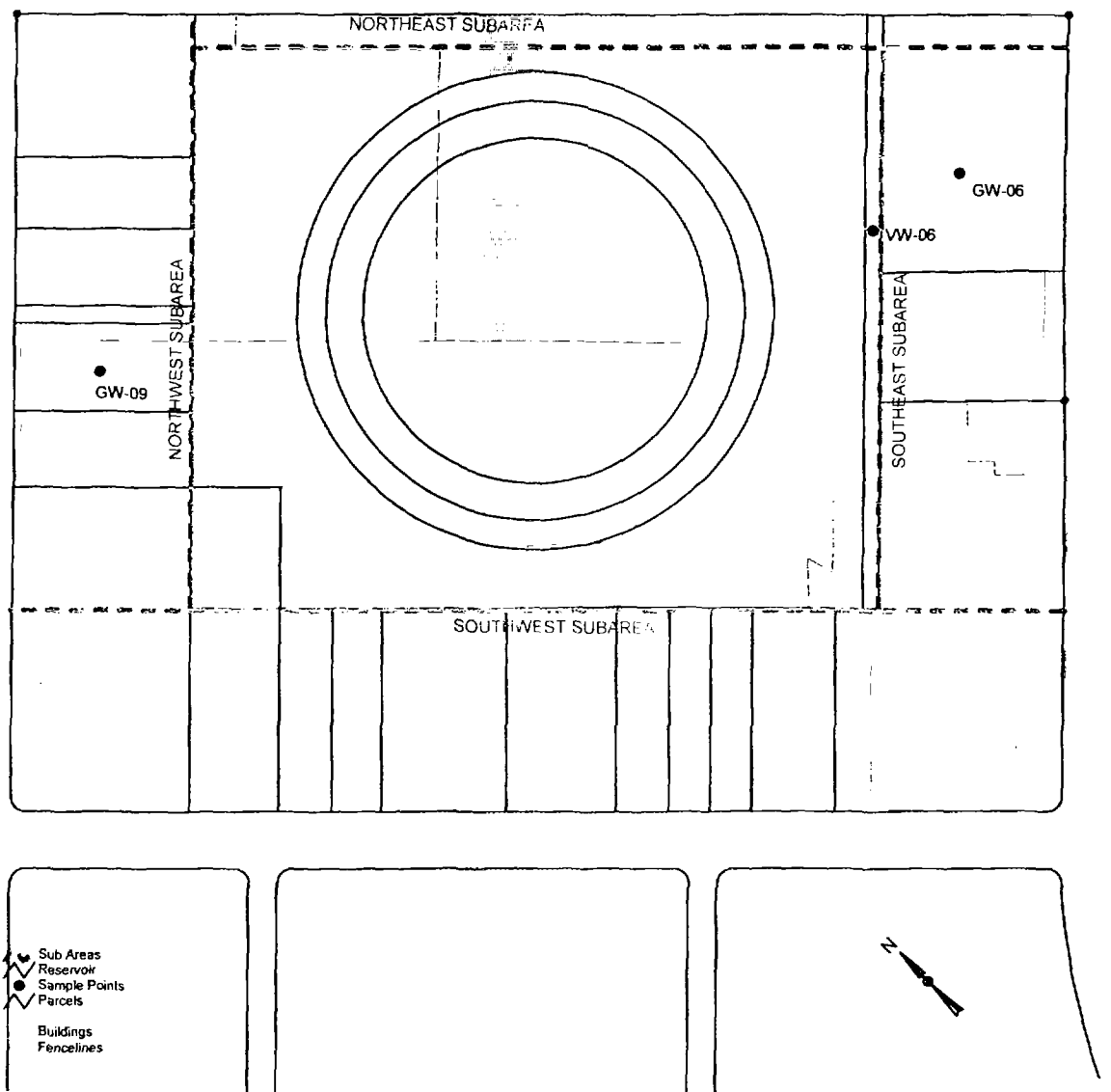


Figure 7. Waste Disposal, Inc., site map, February 16, 1949. Approximate scale 1:3,850.

FEBRUARY 25, 1951 (FIGURE 8)

The site again appears to be active with liquid wastes located primarily within the Earthen-Diked Subarea. Significant changes are seen in the Southeast and Southwest Subareas.

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

The reservoir contains standing liquid as seen in 1949 and standing liquid, dark-toned material, and an area of possible fill are present within the Earthen-Diked Subarea.

Southeast Subarea

Little change is seen in Impoundment 1 since 1949, but Impoundment 2 has been partially filled. A small berm (new since 1949 - not annotated) is present southeast of standing liquid present in Impoundment 2. It appears that the berm was constructed to impede the flow of liquid materials from Impoundment 2. A small trench is seen in the old Impoundment 4. Quonset huts (not annotated) are observed in the southern corner of the site; dark-toned material is present nearby.

Southwest Subarea

Moist fill (possible spillage) is noted near two waste disposal points at the southern and western corners of the Earthen-Diked Subarea. Standing liquid is seen near Los Nietos Road. Two small drainageways and an area of standing liquid are noted near the western corner of the Earthen-Diked Subarea. One drainageway leads to the northwest (see discussion under the Northwest Subarea heading); the other drainageway flows southeast to a small area of standing liquid. A tanker truck is present along the access road leading to the waste disposal point at this location. On the July 27, 1951, photograph (Figure 21) a tanker truck is backed up to this waste disposal point and dark-toned liquid is seen next to the tanker. This suggests that the tanker is discharging liquid material into the Earthen-Diked Subarea.

In the northern portion of Land Parcel 3* (located at the western corner of the Earthen-Diked Subarea), are five short, parallel drainage channels leading to a small drainage ditch that flows onto the northeast. Dark stains are seen within these channels. Three additional small channels leading to the northeast are also noted at this corner of Parcel 3. Apparently liquid wastes have been released at these locations and have flowed to the northeast. A small depression exists near the corner of this parcel where these wastes have probably collected. The extreme western corner of the site is not covered by the February 25, 1951, photographs.

Northwest Subarea

A small drainageway that begins at the waste disposal point at the western corner of the Earthen-Diked Subarea flows into an area adjacent to the Earthen-Diked Subarea where standing liquid has been observed in past photographs (1928-1949). In the northern corner of the site (Land Parcel 7*) is a new facility constructed since 1949. A circular road is noted on the southwest side of the facility.

Road Network and Disposal Points Overlay

The road network at the site has changed since 1945. New roads are visible along the southeast and southwest sides of the Earthen-Diked Subarea. Five waste disposal points are observed along these roads. The site is accessed from Los Nietos Road.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

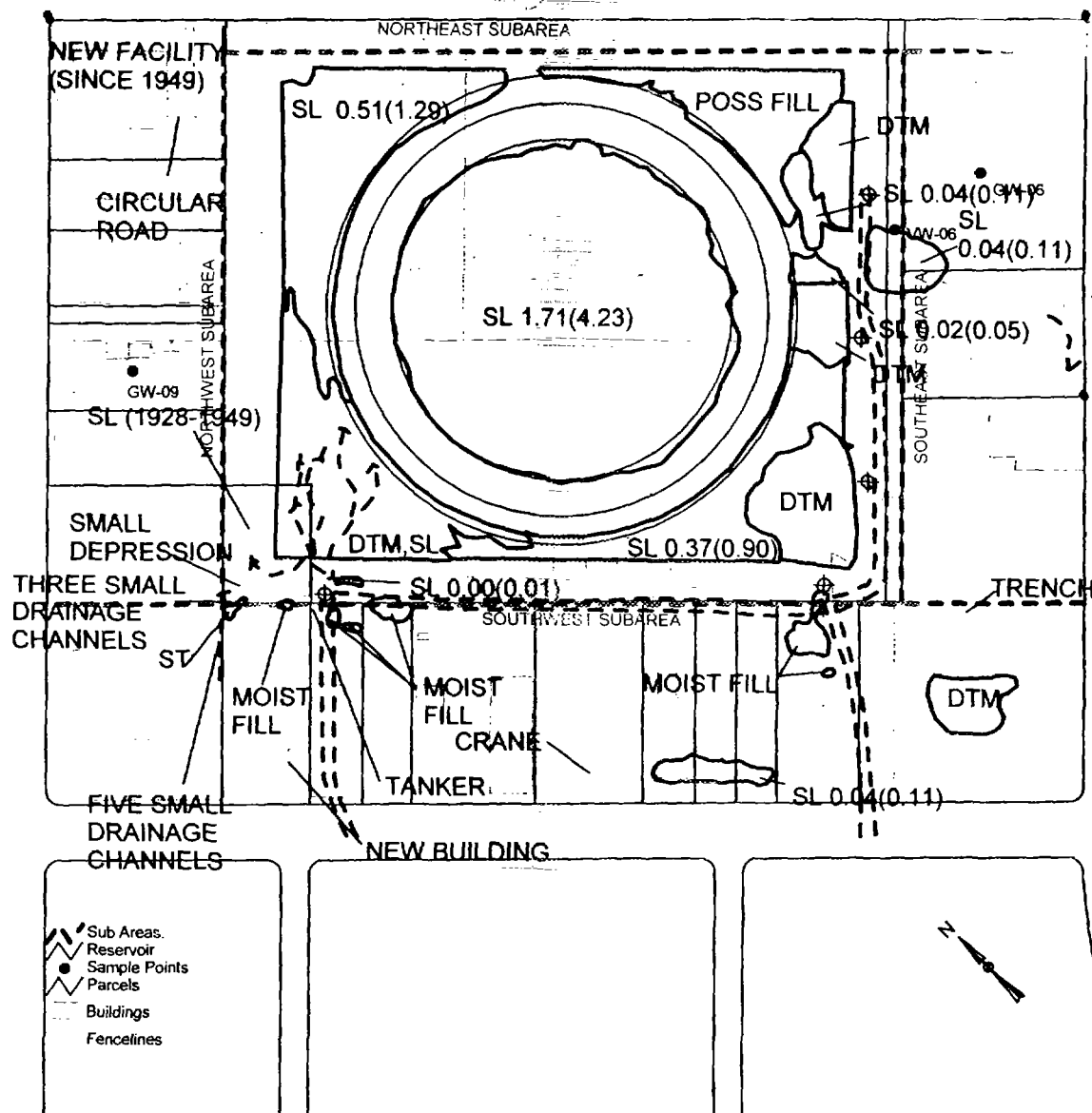


Figure 8. Waste Disposal, Inc., site map, February 25, 1951. Approximate scale 1:3,850.

ROAD NETWORKS AND DISPOSAL POINTS OVERLAY

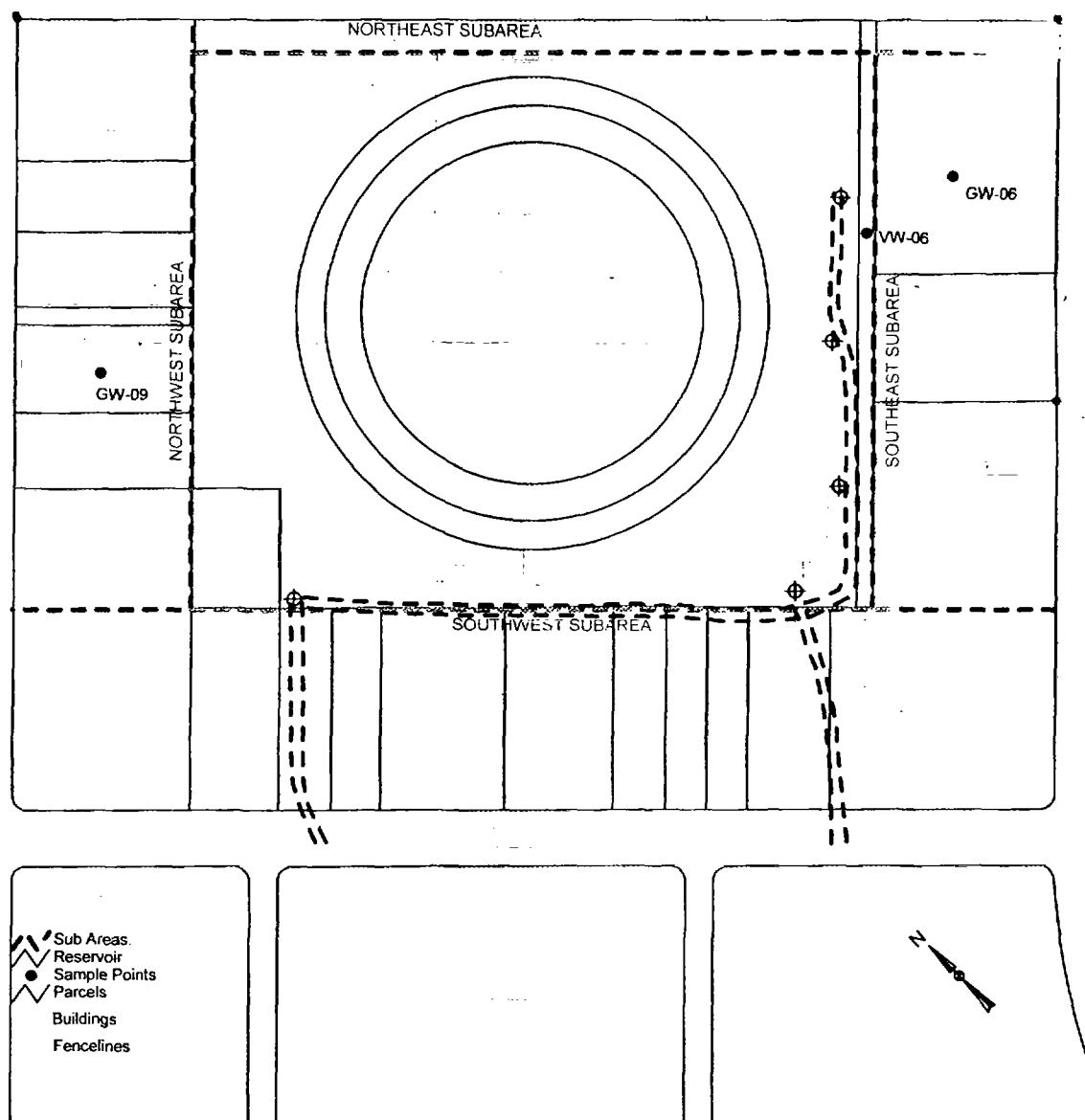


Figure 8. Waste Disposal, Inc., site map, February 25, 1951. Approximate scale 1:3,850.

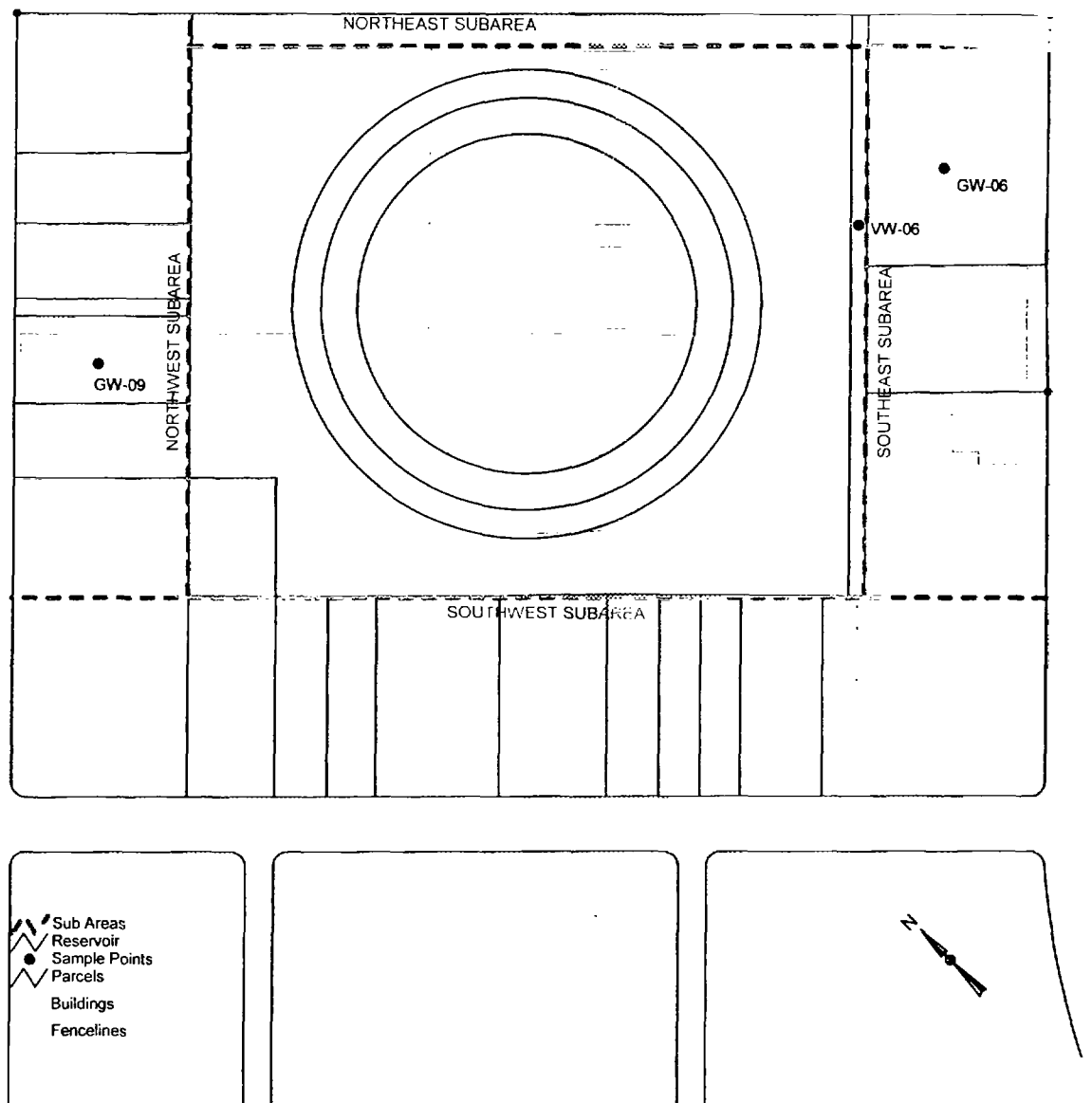


Figure 8. Waste Disposal, Inc., site map, February 25, 1951. Approximate scale 1:3,850.

AUGUST 9, 1955 (FIGURE 9)

The Earthen-Diked Subarea is filled with waste material as seen in 1951 and liquid and solid wastes are present within the oil reservoir itself. Additional facilities and other buildings have been constructed within the Southeast and Southwest Subareas since 1951.

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

Standing liquid is present within the reservoir. Dark- and light-toned solid waste material is also present. The reservoir berm is breached in three places and solid and liquid wastes are being placed in the reservoir. Dark-toned material and rubble are noted at the breached berm on the northwest side of the reservoir. Less standing liquid is present within the diked area compared to 1951; instead, almost the entire diked area is occupied by light- and dark-toned material.

Southeast Subarea

The old impoundments seen in 1951 are no longer present. A large deposit of fill and solid waste is present in the eastern corner of the site. A number of Quonset huts and other buildings (not annotated) are observed in the southern corner of the Southeast Subarea. Fill, solid waste, and stains are noted near some of the huts and buildings.

Southwest Subarea

Five new vertical tanks with staining are observed near the southern corner of the diked subarea. Stains are seen on the nearby access road and northwest of the tanks. A small pipeline is observed between the vertical tanks and a small facility to the southwest. Adjacent to this facility is a large graded area and a large stain. This is a landfarming operation. To the north, a wellhead pumping station is present. To the northeast three drum storage areas, two large vertical storage tanks, and standing liquid are present. A probable truck tanker transport company is located in Parcel 3. A

large stain is seen in the facility lot and standing liquid is located in the northern corner of the parcel as observed in 1951. Dark stains are present within a small drainageway (not annotated) that leads northeast to a small depression containing standing liquid.

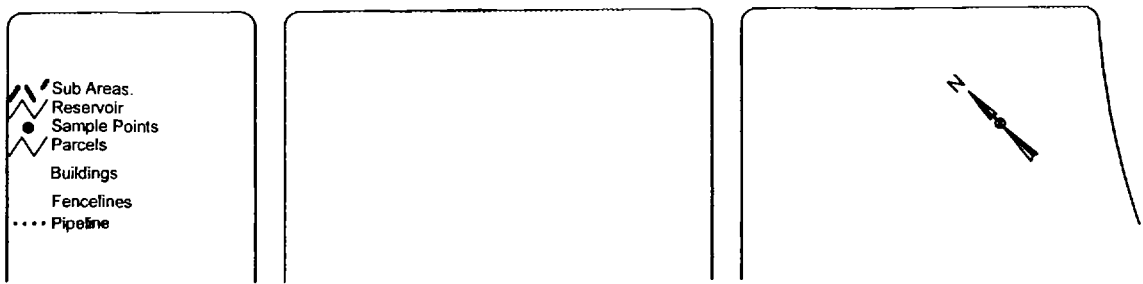
Northwest Subarea

Since 1951 fill and light- and dark-toned material have been deposited next to the Earthen-Diked Subarea. Southwest of Parcel 7 (northern corner) a large area of fill has been spread on the surface of the ground; a large possible stain is present at the edge of the filled area.

Road Network and Disposal Points Overlay

New roads (since 1951) have been constructed around the reservoir and in the Northwestern Subarea and new disposal points are associated with these roads.

REVEGETATION



1

100 100 100



100 200 300 400 500 600 700 800 900 1000

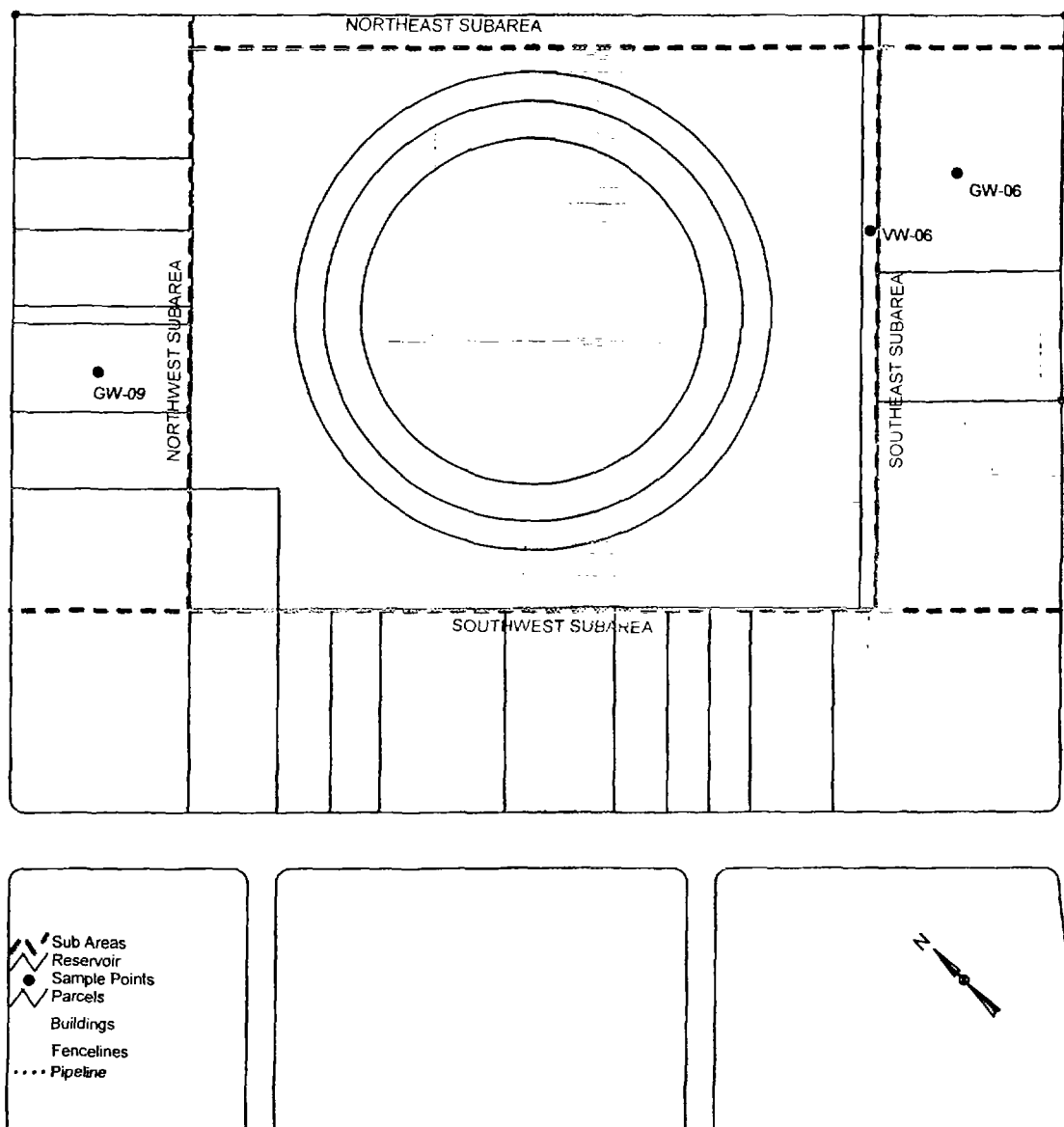


Figure 9. Waste Disposal, Inc., site map, August 9, 1955. Approximate scale 1:3,850.

JANUARY 17, 1956 (FIGURE 10)

Since 1955, additional landfarming is present in the eastern corner of the site. Drainageways and associated staining are evident along the southeastern side of the diked area. Increased disposal activity is evident in the Northwestern Subarea.

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

It appears that the level of liquid in the reservoir has increased when compared with the level observed in 1955. Light- and dark-toned material continue to be present in the reservoir. The areal extent of visible liquid within the earthen dike has increased since 1955.

Southeast Subarea

The large area of mounded fill and solid waste seen in the eastern corner of the site in 1955 has been graded and liquid waste spread on the surface of the filled area. A portion of the liquid waste has flowed to the southeast into a drainage ditch next to Greenleaf Avenue. To the southwest, additional landfarming is observed. Liquid waste has flowed to the southeast across an access road and into the Adjacent Property* where widespread staining is noted. Staining observed south of the large area of standing liquid may be due, in part, to the pumping of liquids through "gopher holes" (EPA 1998) in the reservoir berm. Staining extends to Greenleaf Avenue. Staining (not annotated) is also present on other roadways within the Southeast Subarea.

Southwest Subarea

The landfarming seen next to Los Nietos Road in 1955 continues to be present. Stains are visible adjacent to the five vertical tanks seen in 1955. To the northwest the facility lot at Parcel 3 (western corner of site) is uniformly stained while a darker stain is evident at the northern corner of

the parcel. A small pit is present nearby. This is the same approximate location of the standing liquid seen in 1955 and the small depression observed in 1951.

Northwest and Northeast Subareas

Additional wastes have been deposited in the Northwest Subarea since 1955. Solid waste, dark-toned material, fill, and staining are observed. A drainageway has been constructed that flows to the northeast and then along the northeast border of the diked subarea and terminates near the eastern corner of the site. It could not be determined if liquids from the drainageway reached the property northeast of the site (the future St. Paul's Catholic School property*). At Parcel 7 (northern corner of site) an area of staining and moist fill are observed. In the Northeast Subarea, standing liquid is present outside of the diked area across from the reservoir.

Road Network and Waste Disposal Points Overlay

Additional roads have been constructed in the Southeast and Northwest Subareas of the site. Two new waste disposal points are also present.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

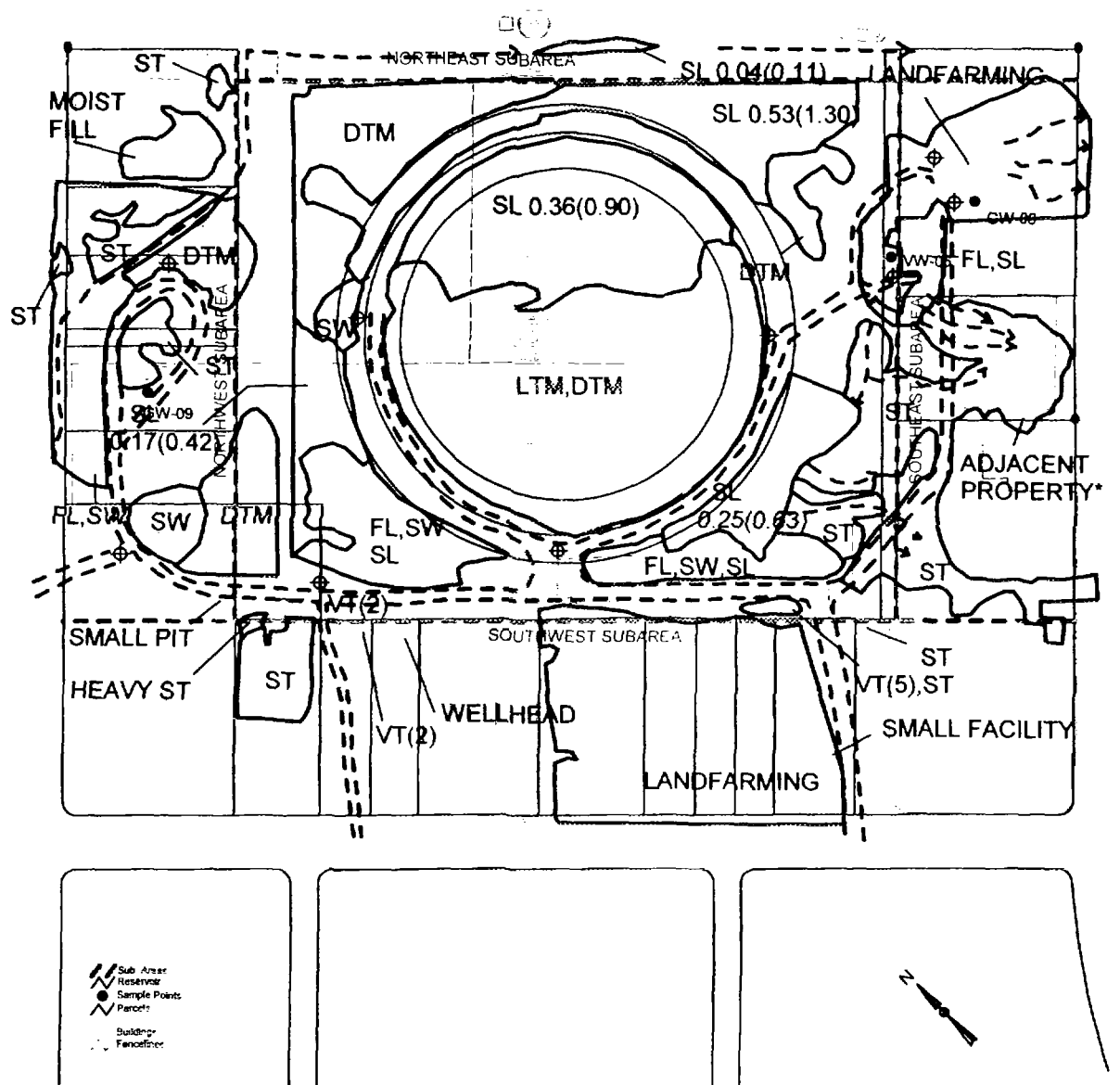


Figure 10. Waste Disposal, Inc., site map, January 17, 1956. Approximate scale 1:3,850.

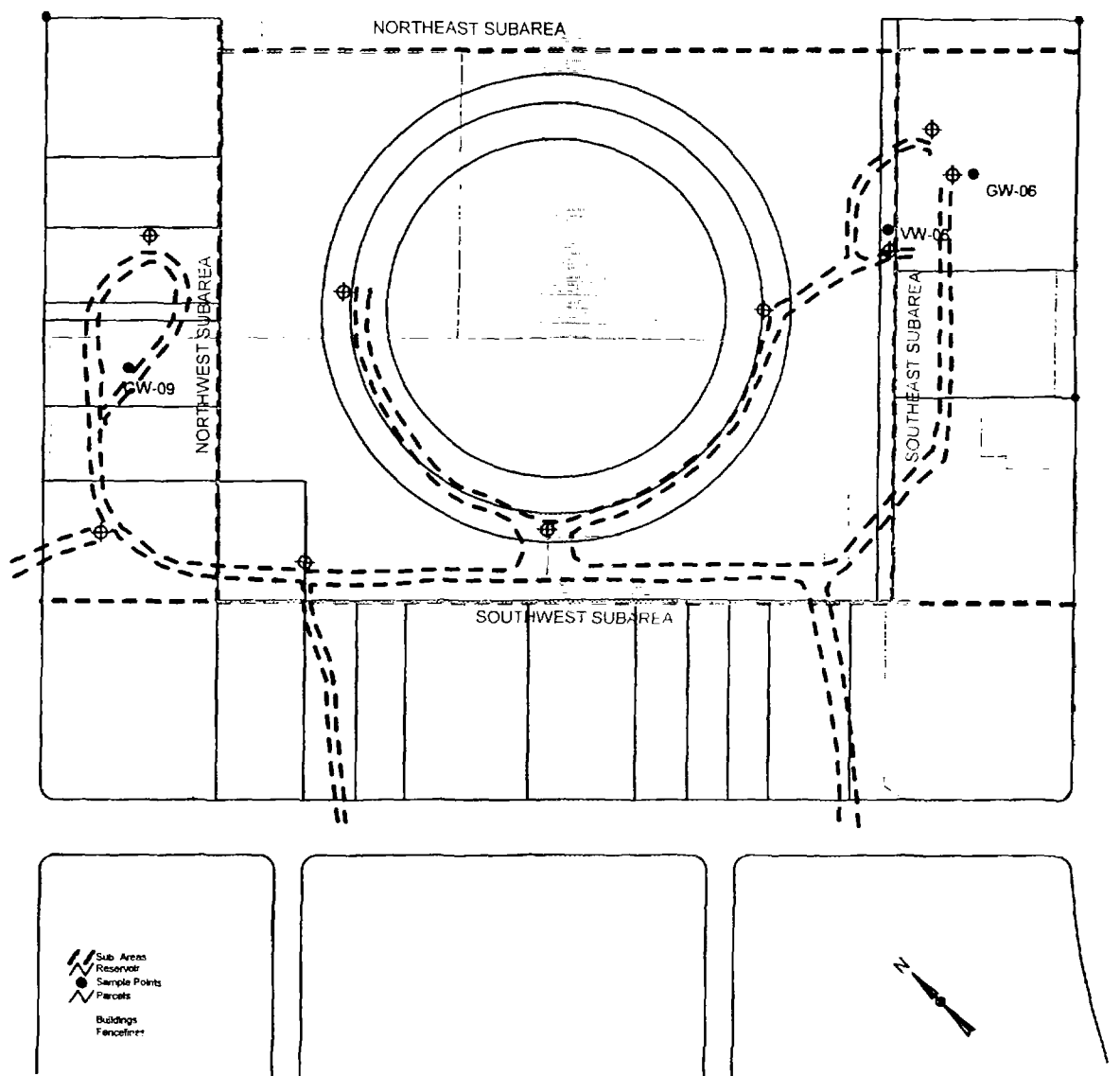


Figure 10. Waste Disposal, Inc., site map, January 17, 1956. Approximate scale 1:3,850.

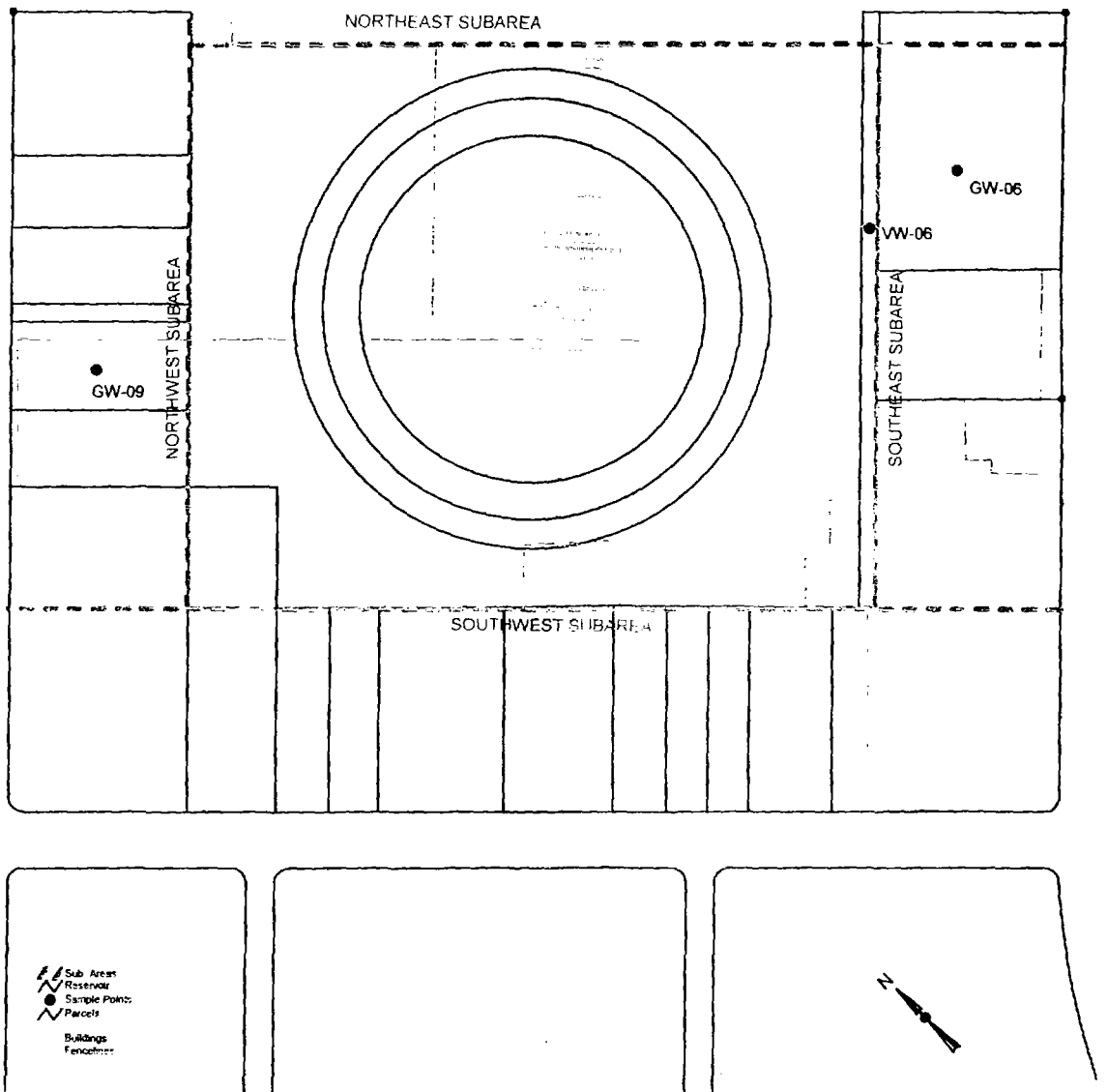


Figure 10. Waste Disposal, Inc., site map, January 17, 1956. Approximate scale 1:3,850.

JANUARY 17, 1958 (FIGURE 11)

Waste disposal continues at the site with additional disposal occurring primarily in the diked subarea and the Northwest Subarea.

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

A large portion of the reservoir berm is open on the southwest side and liquid has apparently flowed from the reservoir onto the landfarming area to the southwest. Standing liquid continues to be present within the reservoir. A tanker truck is backed up to the reservoir apparently discharging liquid wastes. Solid waste and fill occupy the diked area. Waste is being deposited outside the diked area from the waste disposal point on the northwestern side of the reservoir.

Southeast Subarea

The landfarming seen in 1955 in the eastern corner of the site is no longer present and the area is now graded; however, one stain and one area of standing liquid are seen. To the southwest, liquid has flowed in a southeasterly direction onto the adjacent property resulting in stains. This probably resulted from excessive application of liquid wastes to the ground surface. Derelict cars and staining are present within a nearby lot. A possible stain is noted near a building in the southern corner of the site.

Southwest Subarea

Landfarming continues in the area adjacent to Los Nietos Road. The small facility seen in 1955 and 1956 in this landfarming area is larger in extent in 1958. A dirt road connects two land parcels to the northeast with the landfarming area; however, no specific relationship between the parcels and the landfarming area could be determined. Two other stains are observed further to the northeast. Resolution is insufficient to perform a detailed assessment of the other land parcels in the western corner of the site.

Northwest and Northeast Subareas

A stained area originating in the diked area extends into the Northwest Subarea. One stain is present in Parcel 7* (northern corner of site). In the Northeast Subarea it could not be determined if any liquids migrated from the drainageway toward the St. Paul's Catholic School property; however, it appears as though liquids could migrate onto the property if a sufficient volume flowed through the drainageway. A berm (not annotated) has been constructed since 1956 on a portion of the St. Paul property; however, its use could not be determined.

Road Network and Waste Disposal Points Overlay

The road around the southeast side of the reservoir and the road in the Northeast Subarea are no longer in use.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

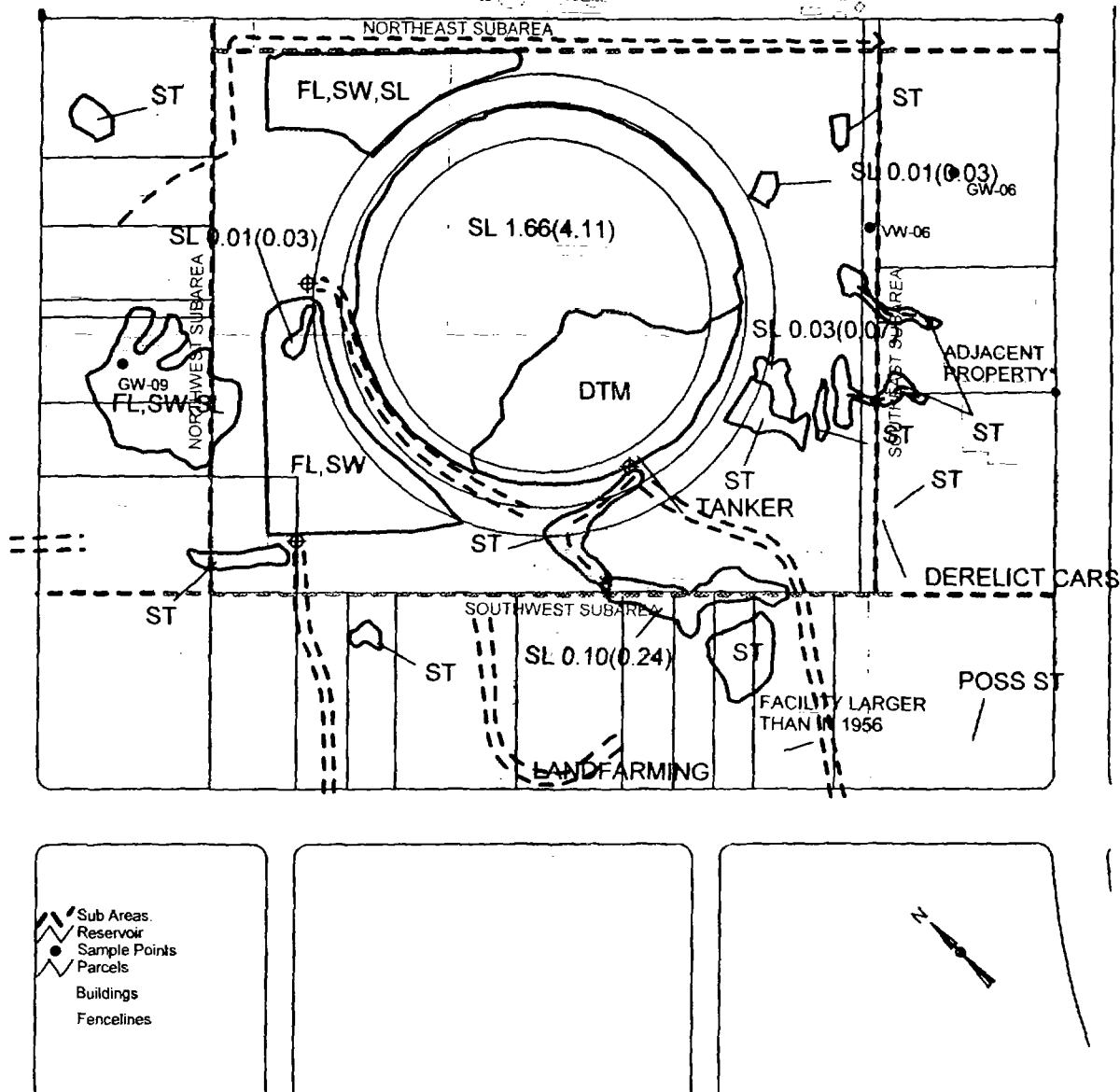


Figure 11. Waste Disposal, Inc., site map, January 17, 1958. Approximate scale 1:3,850.

ROAD NETWORKS AND DISPOSAL POINTS OVERLAY

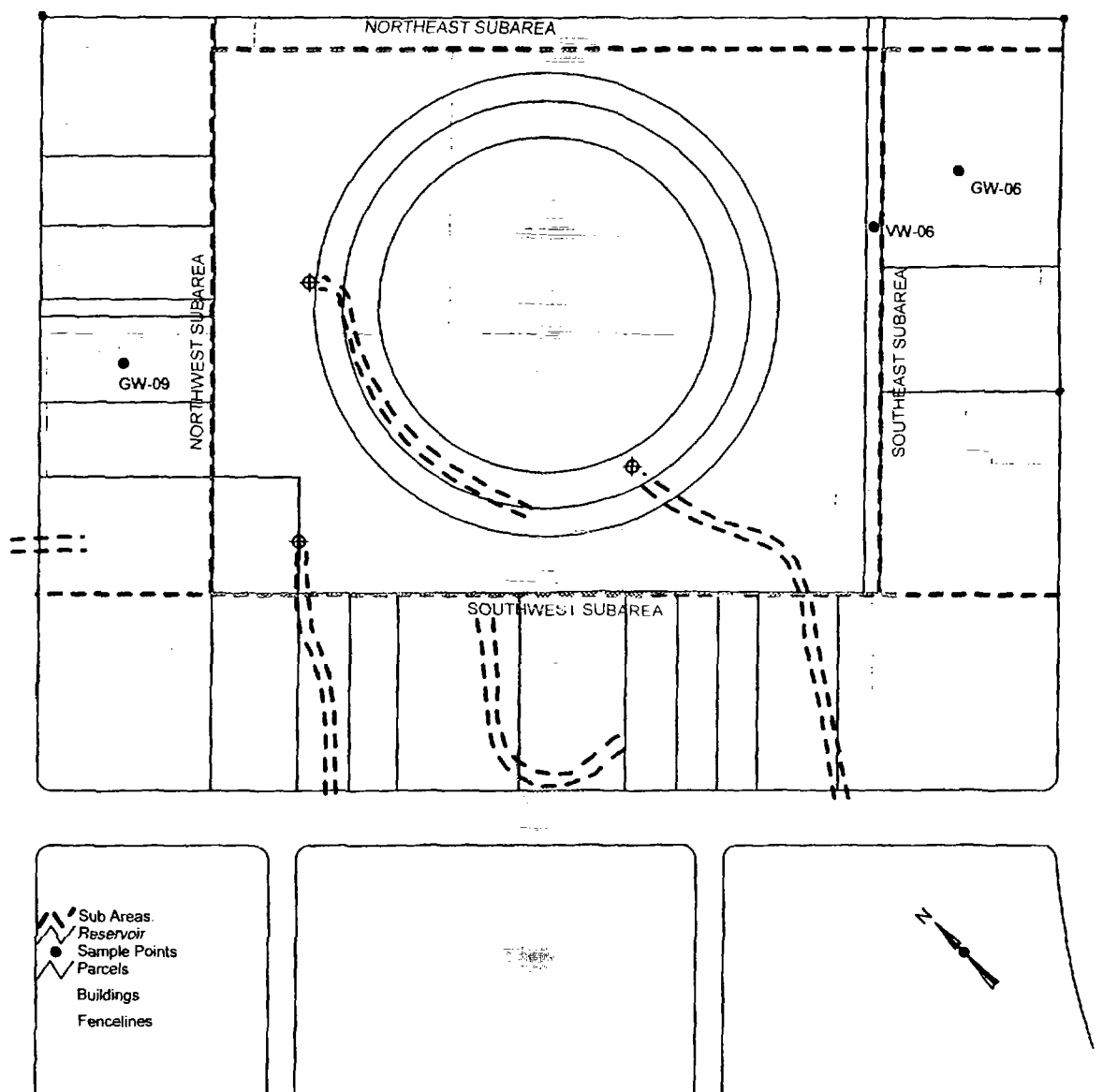


Figure 11. Waste Disposal, Inc., site map, January 17, 1958. Approximate scale 1:3,850.

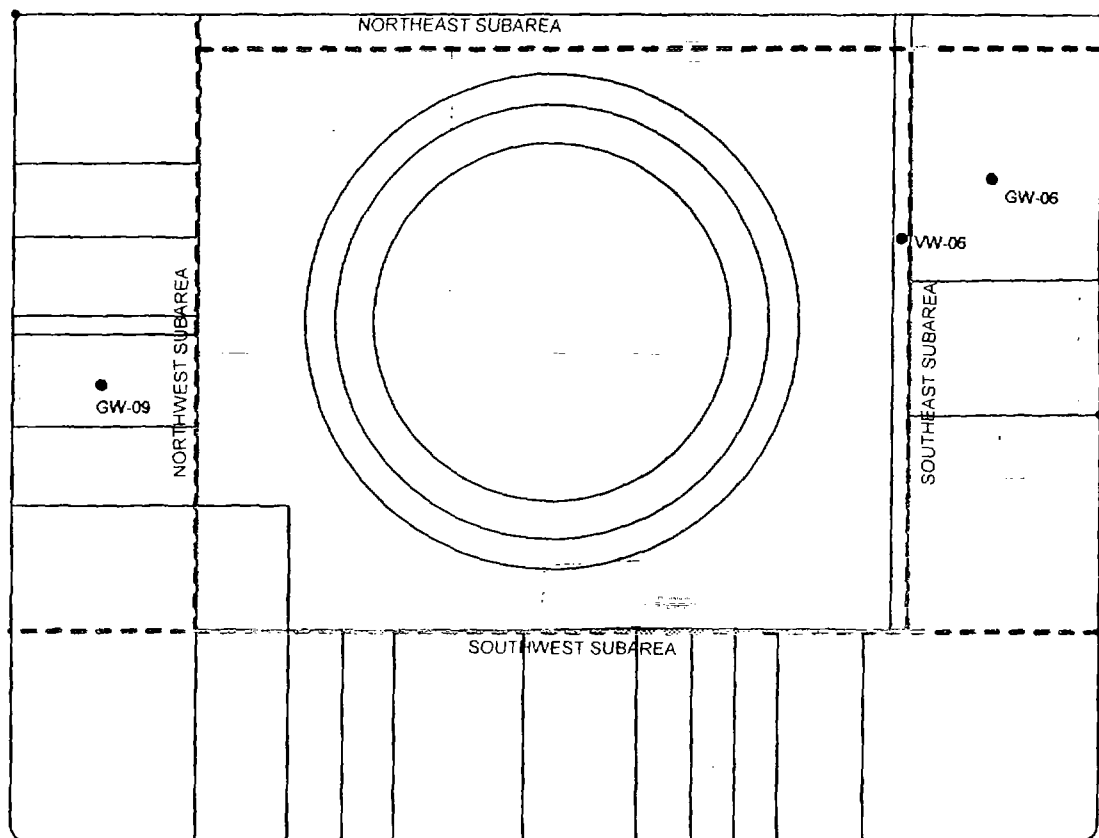


Figure 11. Waste Disposal, Inc., site map, January 17, 1958. Approximate scale 1:3,850.

JUNE 15, 1959 (FIGURE 12)

Progressive filling of the reservoir continues. Staining and standing liquid also continue to be present south and southwest of the reservoir. Staining and standing liquid are visible in the western corner of the site and also in Parcel 7.

Waste-Disposal-Related Features Overlay

Oil Reservoir Subarea

The oil reservoir is being progressively filled with wastes from the southwest side. A bulldozer is observed pushing material into the reservoir. On the southeast side of the reservoir is the apparent drainageway observed in 1955 and 1956. Drainage of liquids from the reservoir has also occurred from the large breach on the southwest side.

Earthen-Diked Subarea

Since 1958, additional waste material has been deposited within the diked subarea. A pipeline that probably originates at the reservoir trends to the southwest toward the facility located in the landfarming area. Liquids are probably being pumped to the facility and subsequently spread onto the ground surface. See discussion of the landfarming area under the Southwest Area for additional detail.

Southeast Subarea

A partially revegetated area is seen in the eastern corner of the site and a new parking lot (not annotated) is present to the southwest. Stains are observed near the parking lot where landfarming was seen in 1958. A large area of standing liquid probably caused by the flow of liquids from the reservoir is observed southeast of the reservoir.

Southwest Subarea

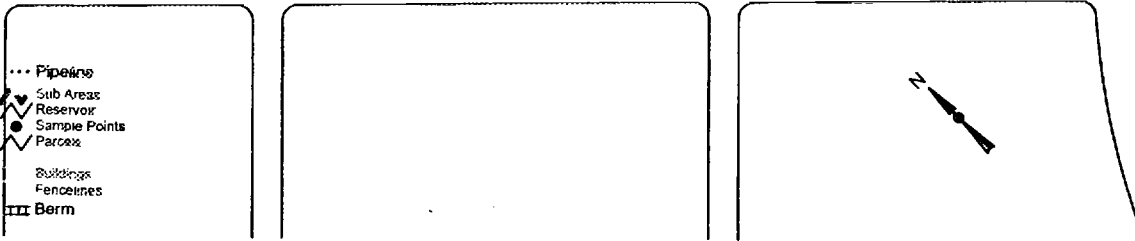
Within the landfarming area adjacent to Los Nietos Road is standing liquid and staining probably from leaks in the pipeline (discussed in the Earthen-Diked Subarea section). To the northeast is a stained area where fill has been placed to adsorb liquids. Drums and stains are observed to the northeast. A small ditch with dark stains is observed northeast of Parcel 4. The ditch probably originates within the parcel itself. The extreme western corner of Parcel 4 is not covered on the 1959 photographs.

Northwest and Northeast Subareas

Stains, standing liquid, and partially vegetated fill are seen in the Northwest Subarea. Within Parcel 7 (northern corner of site) is a large area of staining, cement mixers, and deposits of dark-toned material. In the Northeast Subarea fill is observed within the drainageway along the northeast border of the diked area. The fill has apparently been transported by runoff of liquids from the Northwest Subarea into the drainageway.

Road Network and Waste Disposal Points Overlay

Since 1958 a new road has been constructed on the southeast side of the Earthen-Diked Subarea.



1

ROAD NETWORKS AND DISPOSAL POINTS OVERLAY

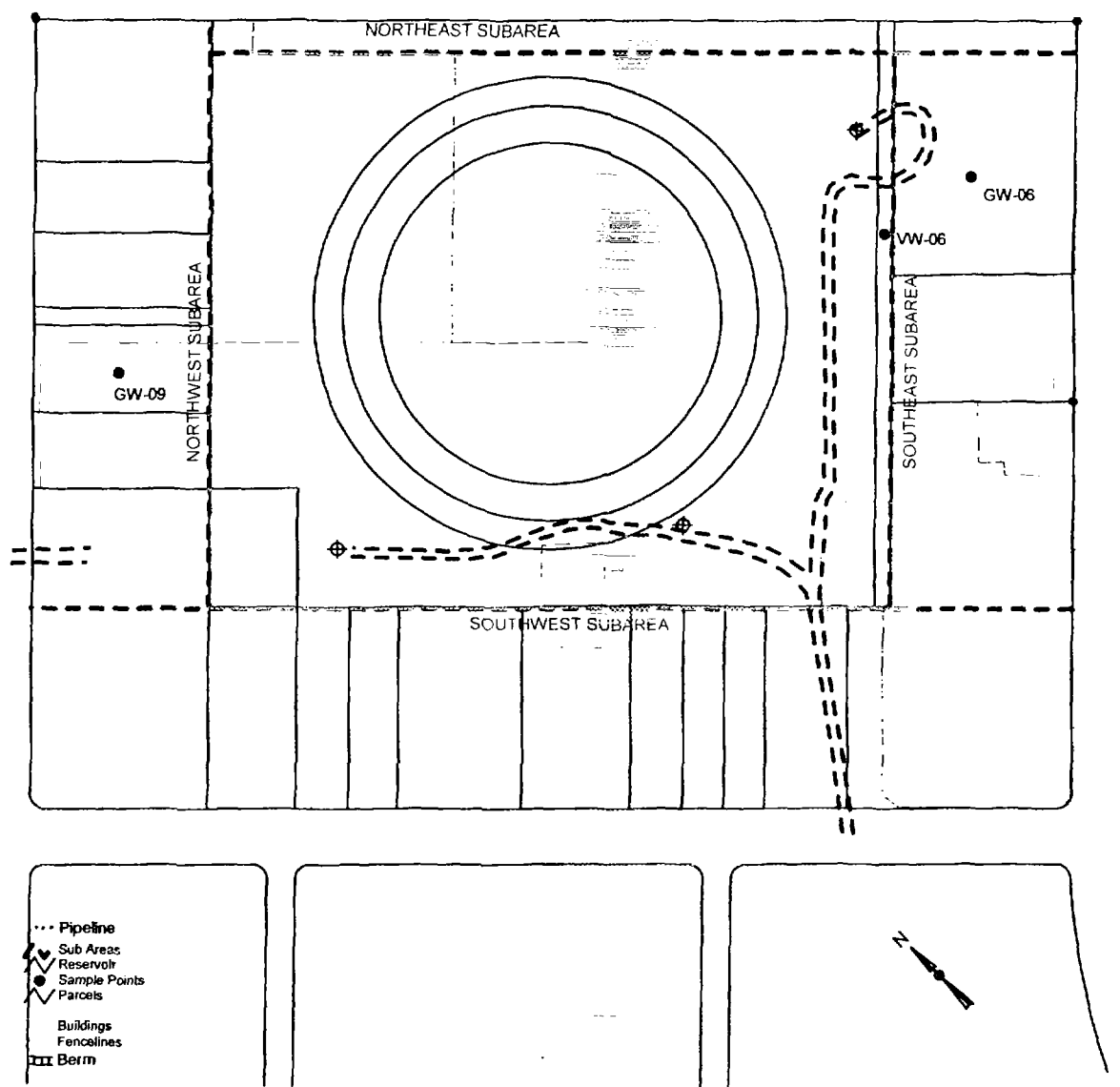


Figure 12. Waste Disposal, Inc., site map, June 15, 1959. Approximate scale 1:3,850.

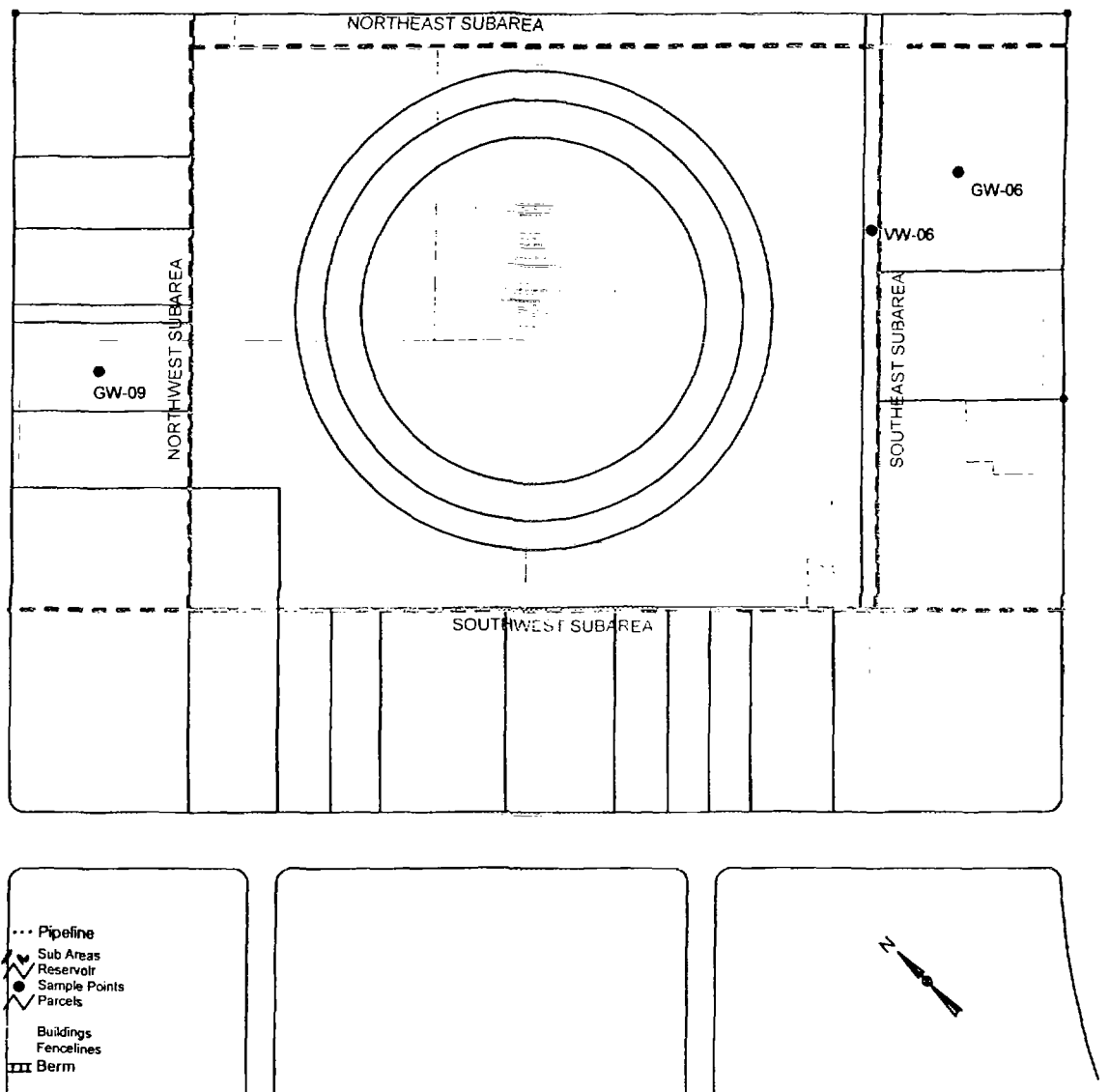


Figure 12. Waste Disposal, Inc., site map, June 15, 1959. Approximate scale 1:3,850.

DECEMBER 2, 1962 (FIGURE 13)

The reservoir has been completely filled and a large area of staining and standing liquid remains.

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

The oil reservoir and almost all of the Earthen-Diked Subarea are filled. Dark stains and standing liquid are observed atop the filled areas.

Southeast and Southwest Subareas

Staining is observed southeast of the former reservoir. In the western corner of the site staining is present near a drum storage area seen in 1959. Staining and standing liquid are noted to the northeast.

Northwest and Northeast Subareas

Staining is noted southwest of Parcel 7. Standing liquid is present in the drainageway that leads along the northeastern side of the Earthen-Diked Subarea. Standing liquid is also present on an adjacent property to the northeast of the site and the St. Paul's Catholic School Property.

Road Network and Waste Disposal Points Overlay

Because site activity had decreased since 1959, only two roads are seen on the site.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

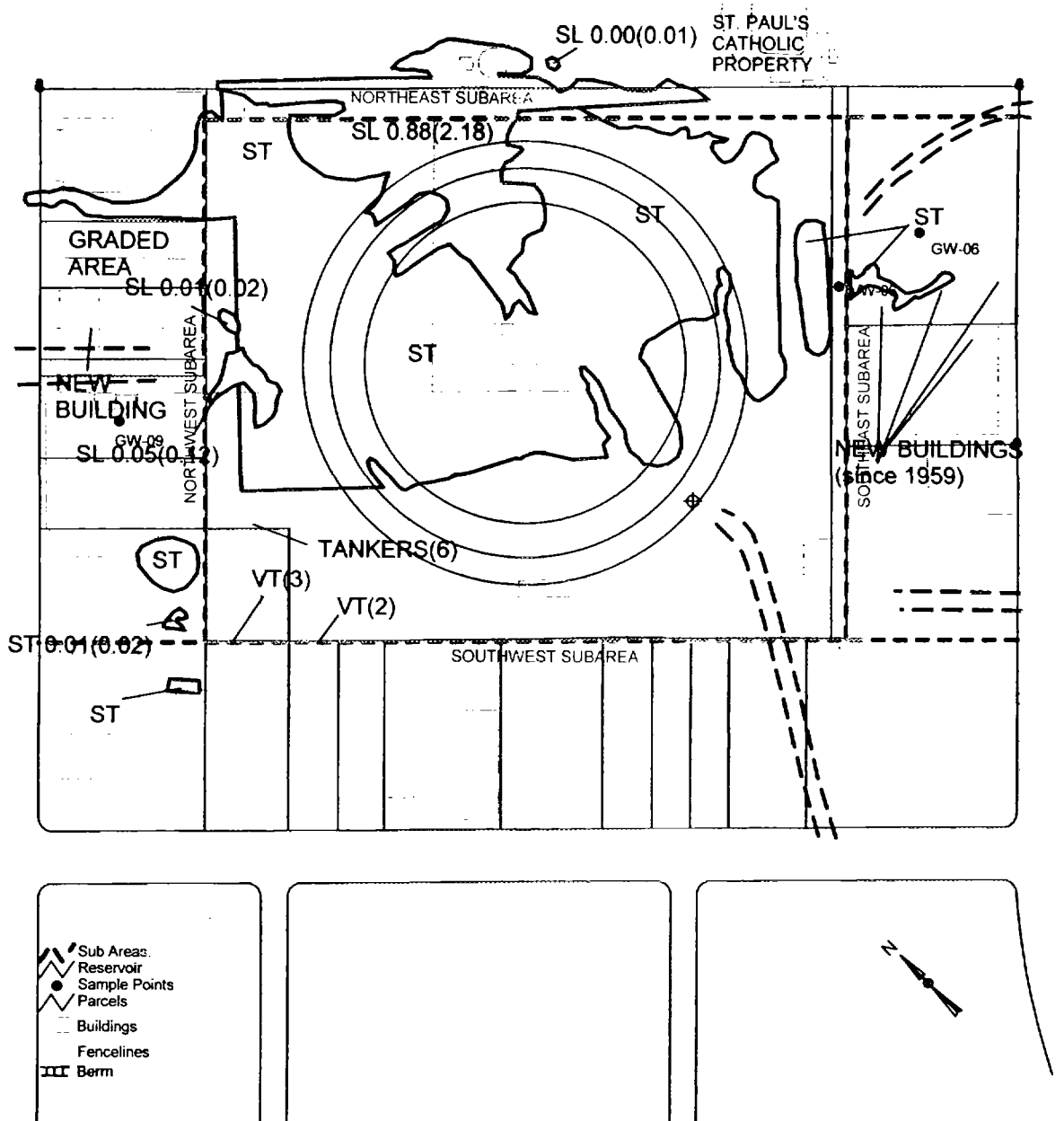


Figure 13. Waste Disposal, Inc., site map, December 2, 1962. Approximate scale 1:3,850.

ROAD NETWORKS AND DISPOSAL POINTS OVERLAY

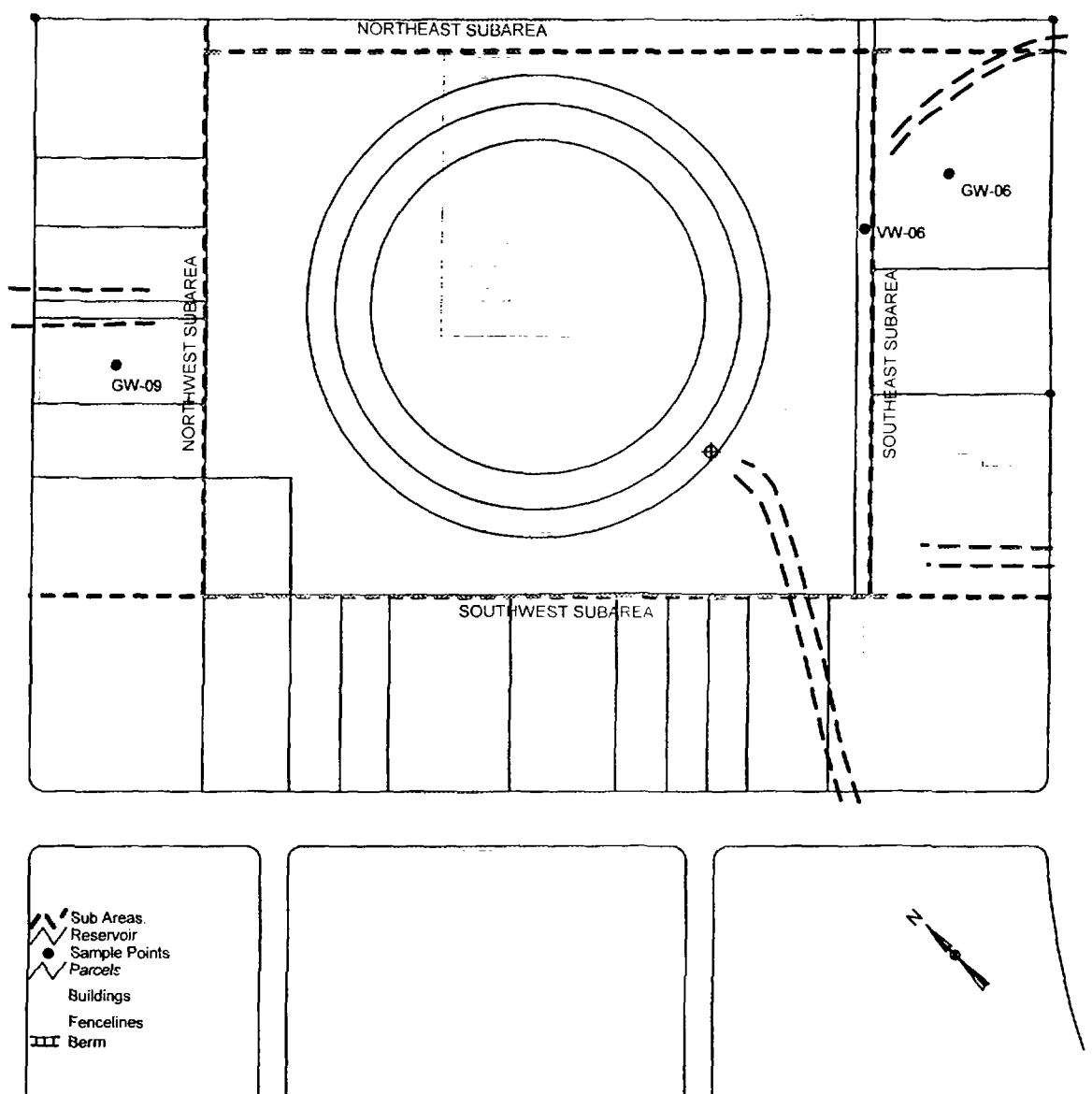


Figure 13. Waste Disposal, Inc., site map, December 2, 1962. Approximate scale 1:3,850.

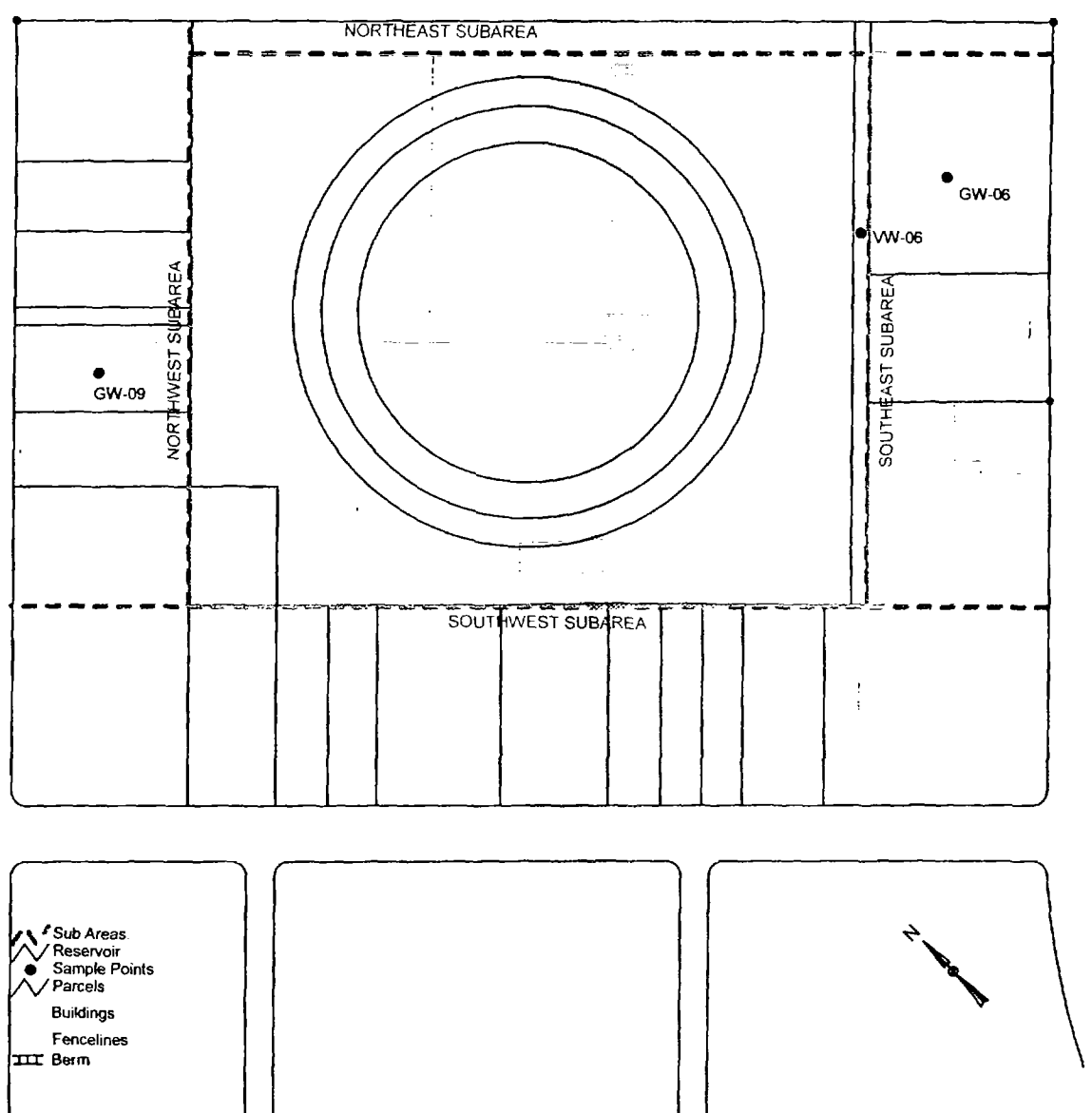


Figure 13. Waste Disposal, Inc., site map, December 2, 1962. Approximate scale 1:3,850.

FEBRUARY 28, 1963 (FIGURE 14)

Fill continues to be added to the site since 1962.

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

Fill continues to be placed within the Oil Reservoir and Earthen-Diked Subareas. Standing liquid, staining, and fill are present.

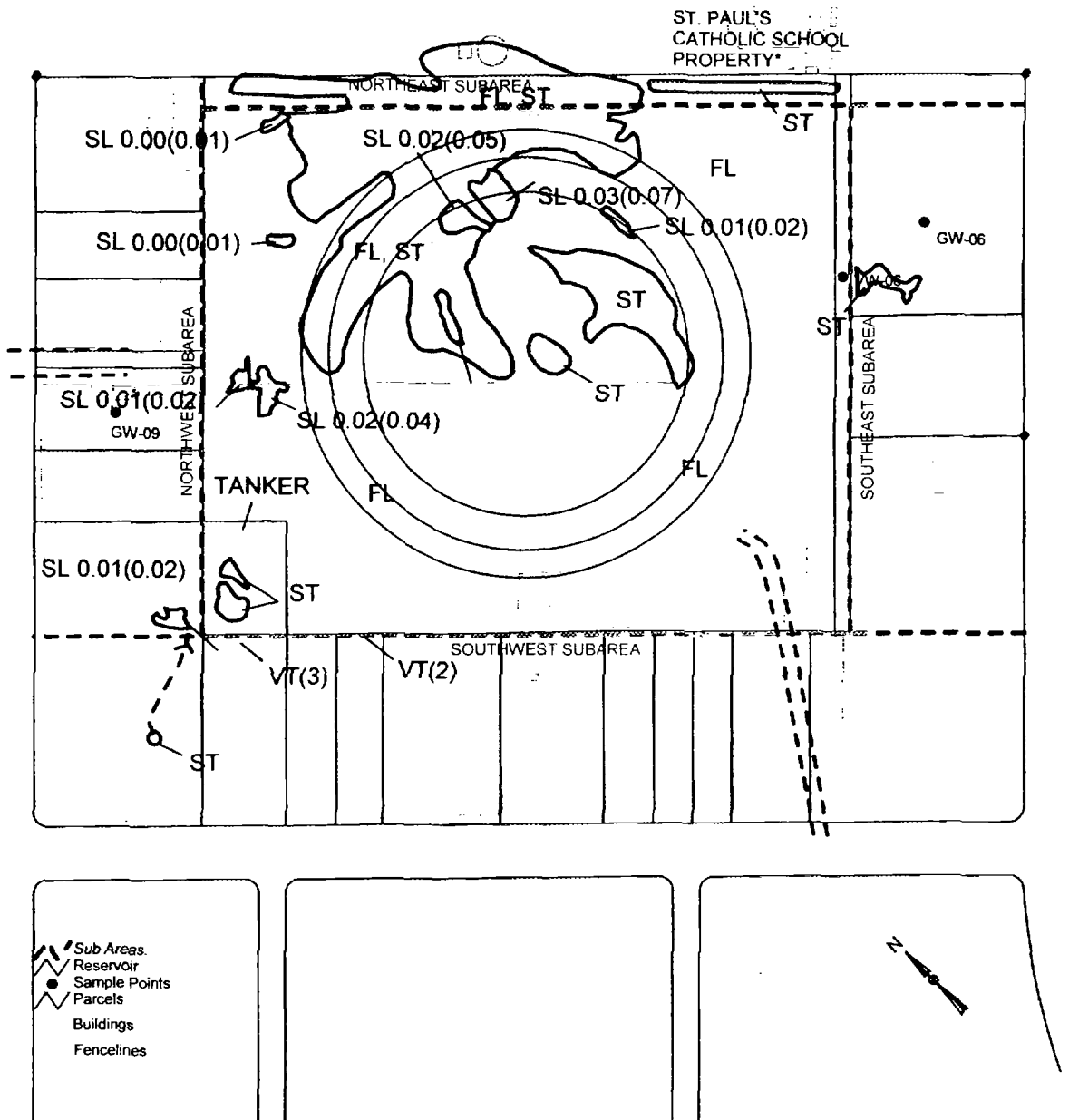
Southeast and Southwest Subareas

Staining continues to be present near two buildings (not annotated) southeast of the former reservoir. One tanker and two stained areas are observed in the western corner of the site. The two stained areas are possibly related to the three vertical storage tanks where staining was observed in 1959. A small stain is visible in the facility lot of Parcel 4. Runoff appears to flow in a northeasterly direction to the area of standing liquid adjacent to Parcel 4.

Northeast Subarea

Staining is evident to the northeast of the site and adjacent to St. Paul's Catholic School Property where standing liquid was noted in 1962.

ST. PAUL'S
CATHOLIC SCHOOL
PROPERTY*



47

The map shows the St. Paul's Catholic School property, which is divided into several subareas and contains various features. The subareas are labeled as follows:

- NORTHEAST SUBAREA:** Located at the top of the property, containing sample points SL 0.00(0.01), SL 0.02(0.05), and SL 0.03(0.07).
- NORTHWEST SUBAREA:** Located on the left side, containing sample points SL 0.00(0.01), SL 0.01(0.02), and SL 0.02(0.04).
- SOUTHWEST SUBAREA:** Located at the bottom, containing sample points VT(2) and VT(3).
- SOUTHEAST SUBAREA:** Located on the right side, containing sample points GW-06 and GW-05.

Other features include:

- ST. PAUL'S CATHOLIC SCHOOL PROPERTY:** The main area of the map.
- FL, ST, and FL ST:** Labels indicating different types of features or sample points.
- TANKER:** A feature located in the Northwest Subarea.
- Buildings:** Represented by small black rectangles.
- Fencelines:** Represented by dashed lines.
- Sample Points:** Represented by black dots, with labels such as GW-06, GW-05, and SL 0.01(0.02).
- Reservoir:** A feature located in the Northwest Subarea.
- Parcels:** Represented by solid lines.

A legend in the bottom left corner defines the symbols used on the map:

- Sub Areas.
- Reservoir
- Sample Points
- Parcels
- Buildings
- Fencelines

A north arrow is located in the bottom right corner, pointing towards the top right of the map.

47

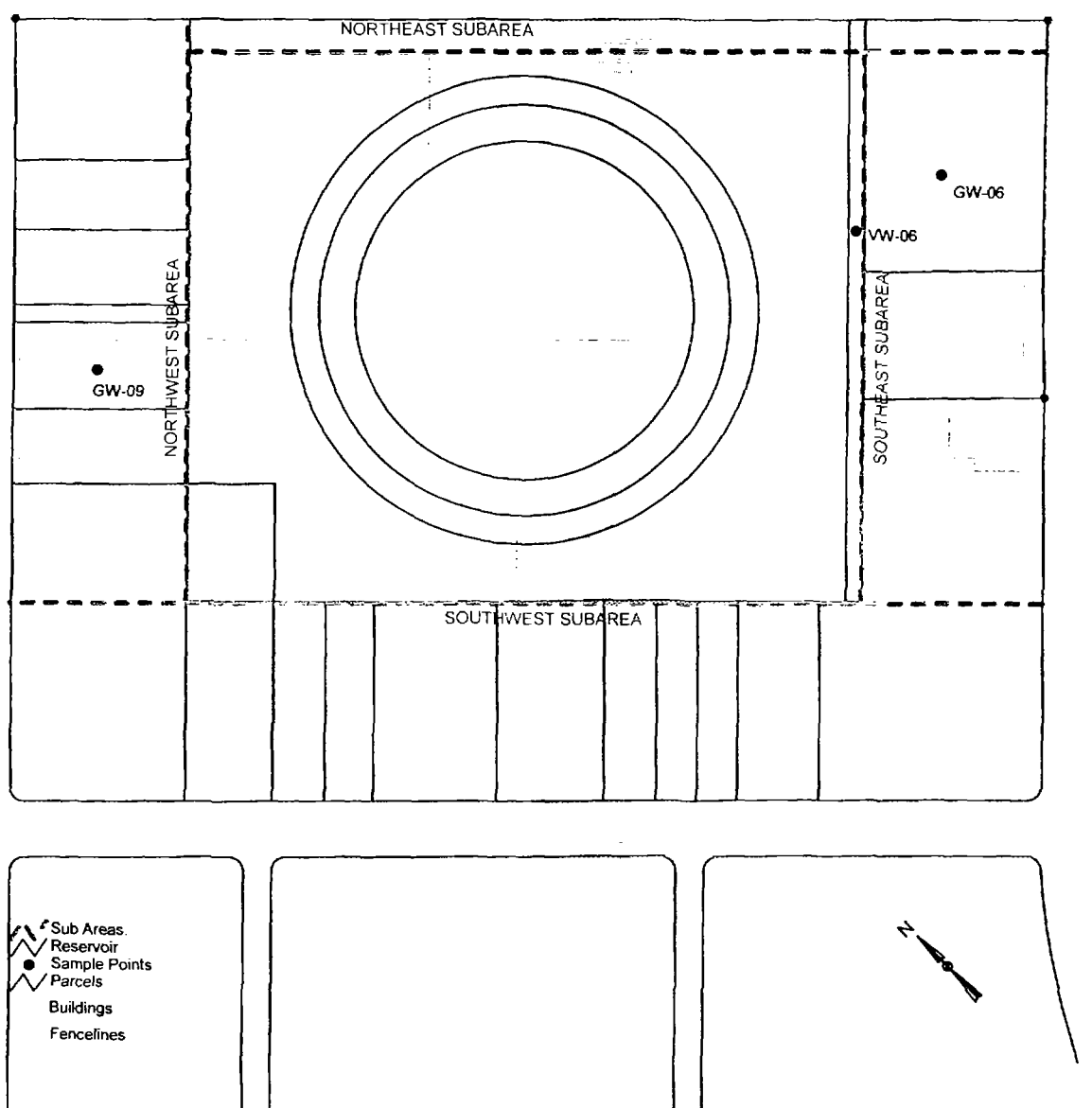


Figure 14. Waste Disposal, Inc., site map, February 28, 1963. Approximate scale 1:3,850.

SEPTEMBER 23, 1968 (FIGURE 15)

Waste-Disposal-Related Features Overlay

Oil Reservoir and Earthen-Diked Subareas

These two areas are now completely covered with fill and no significant features are present.

Southwest Subarea

Standing liquid and staining are observed near the northeast end of Building 12087*. Standing liquid and staining are seen in the western corner of the site. Resolution of the 1968 photographs precludes observation of the three vertical storage tanks seen at this location in 1963. No observation of the ditch adjacent to Parcel 4 (seen in 1963) was possible due to a parking lot constructed after 1963 in the area.

**ROAD NETWORKS AND DISPOSAL POINTS OVERLAY
WASTE DISPOSAL-RELATED FEATURES OVERLAY**

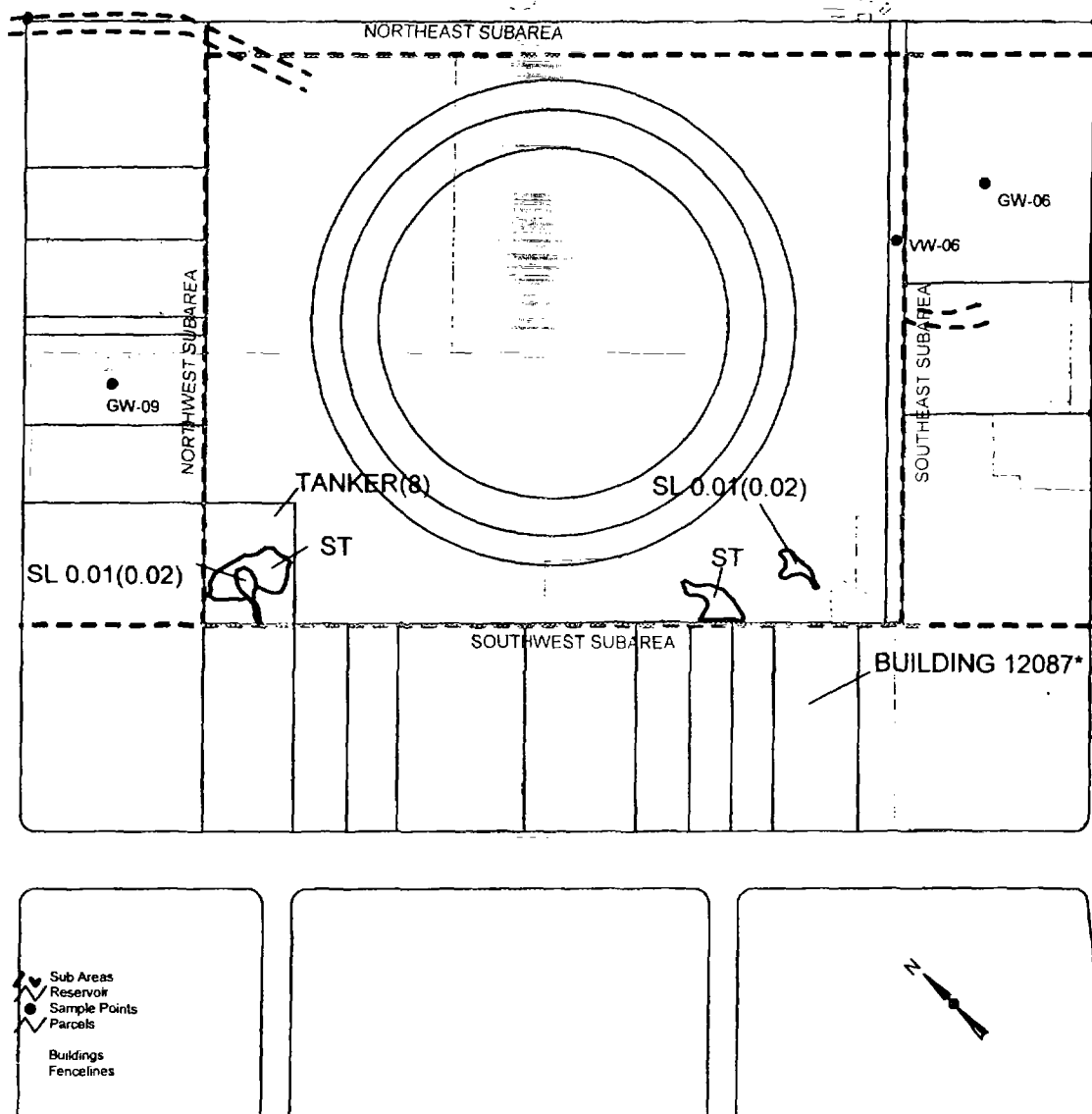


Figure 15. Waste Disposal, Inc., site map, September 23, 1968. Approximate scale 1:3,850.

ROAD NETWORKS AND DISPOSAL POINTS OVERLAY

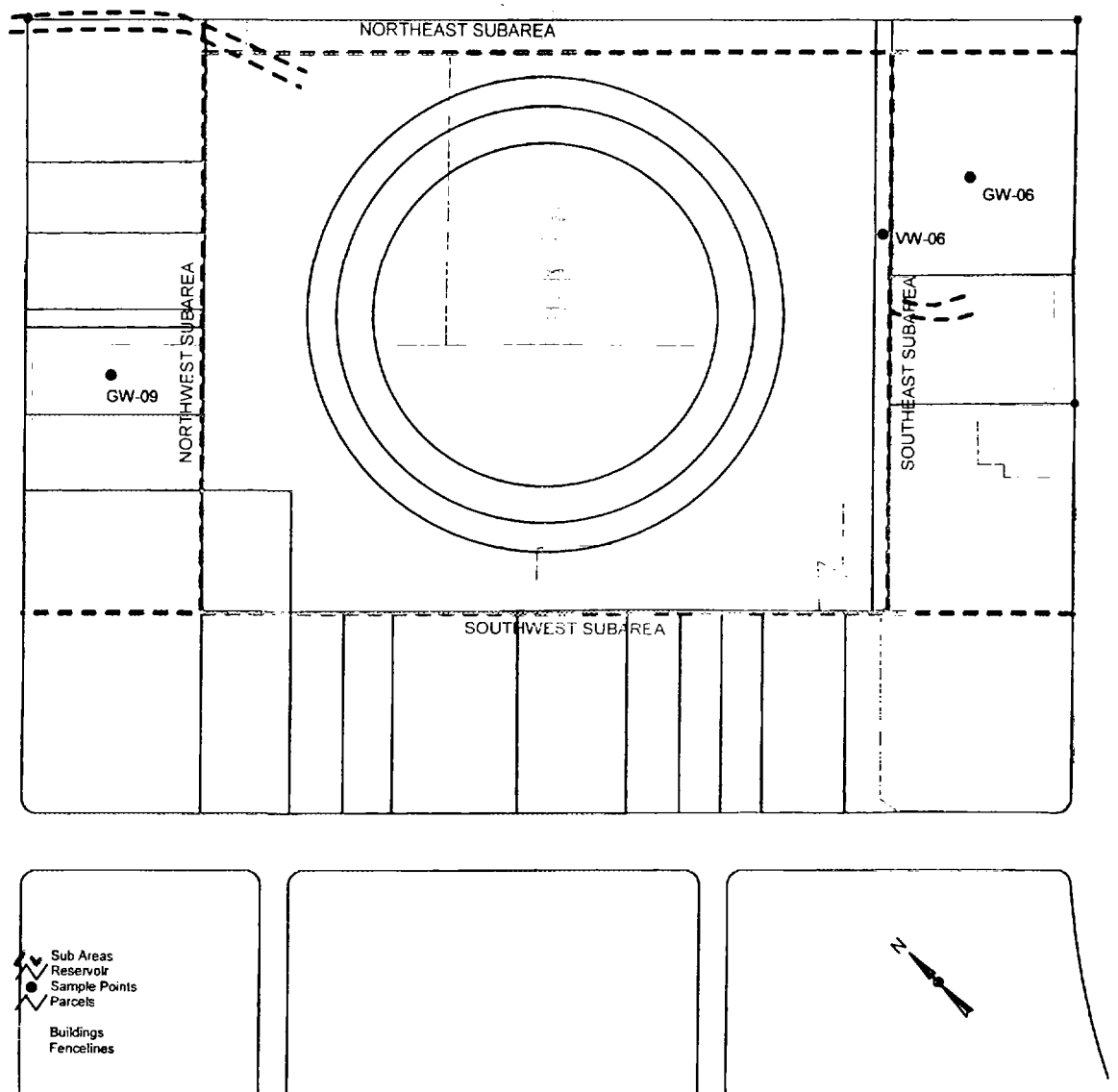


Figure 15. Waste Disposal, Inc., site map, September 23, 1968. Approximate scale 1:3,850.

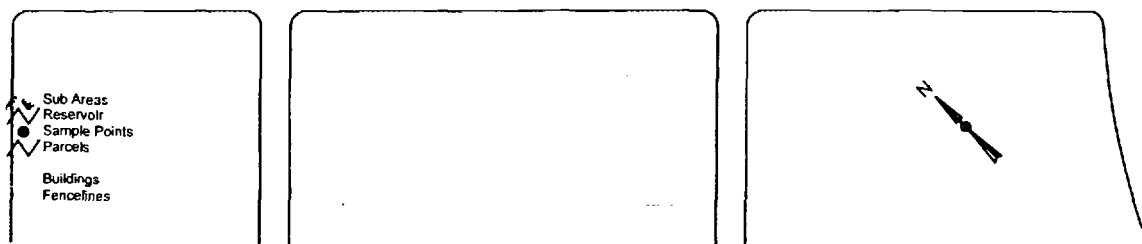
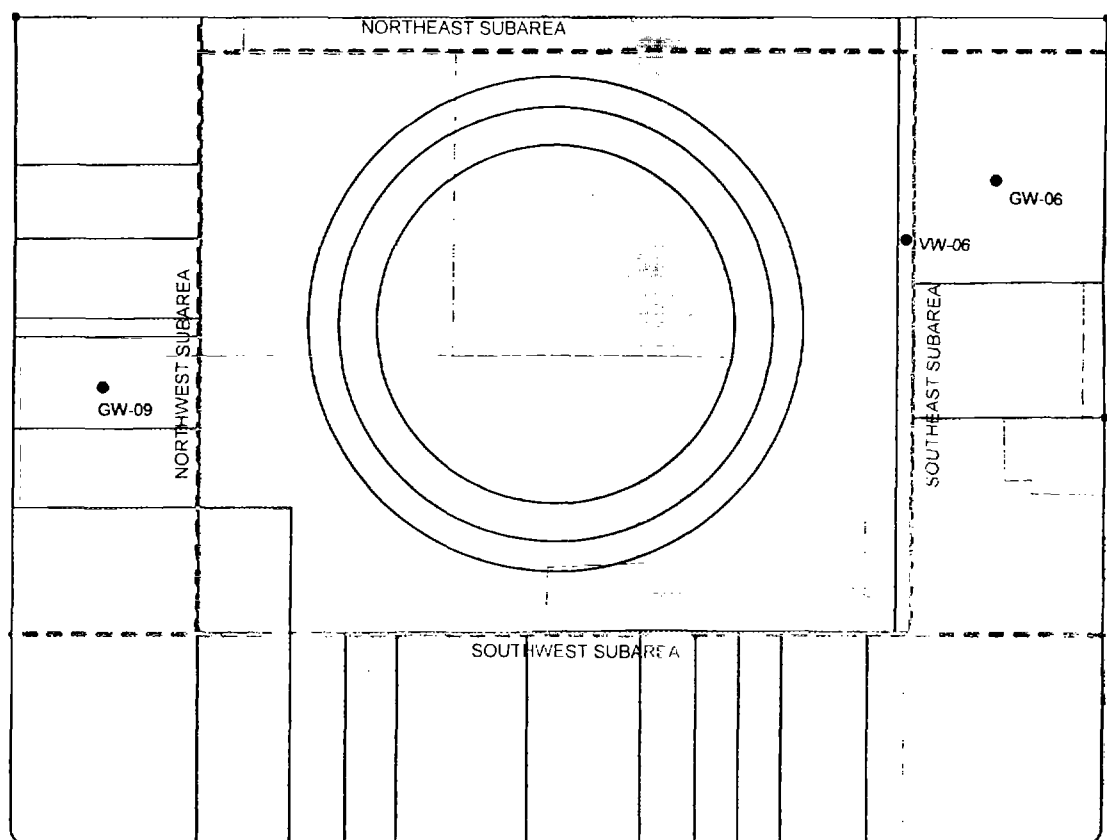


Figure 15. Waste Disposal, Inc., site map, September 23, 1968. Approximate scale 1:3,850.

PHOTOGRAPHIC EXAMPLES OF STUDY AREA

Aerial associated photo analysis data (Figures 16 through 19) are included in this report as examples so that the reader can see actual waste-disposal-related features that were identified during this project. Discussion of the analysis of these photographs is presented with the respective analysis overlays in the first section of this report.

Figures 20 and 21 depict tanker trucks observed at the western corner of the Earthen-Diked Subarea on February 25, 1951, and July 27, 1951, respectively.

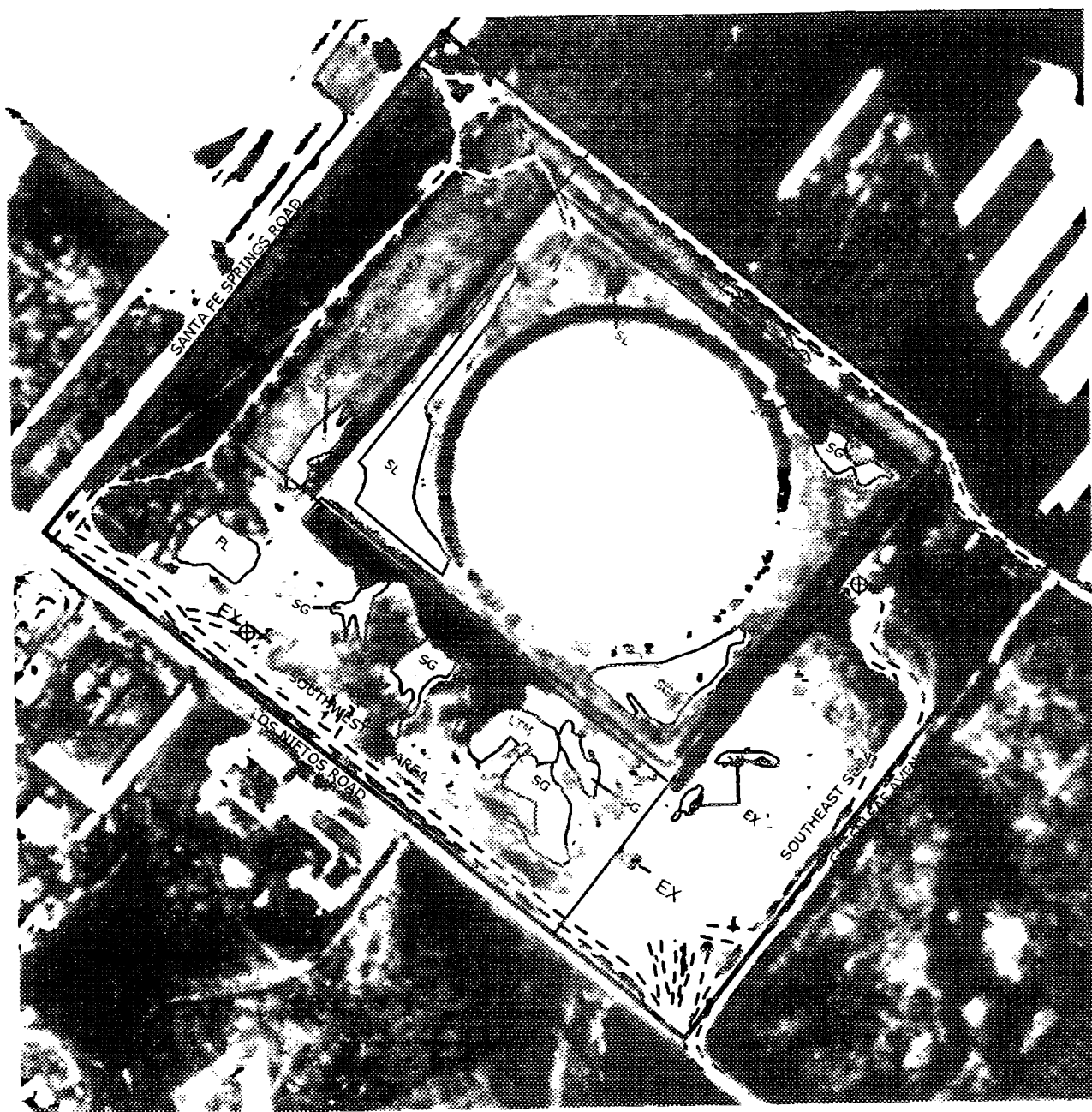


Figure 16. Waste Disposal, Inc., site, 1928. Approximate scale 1:4,230.

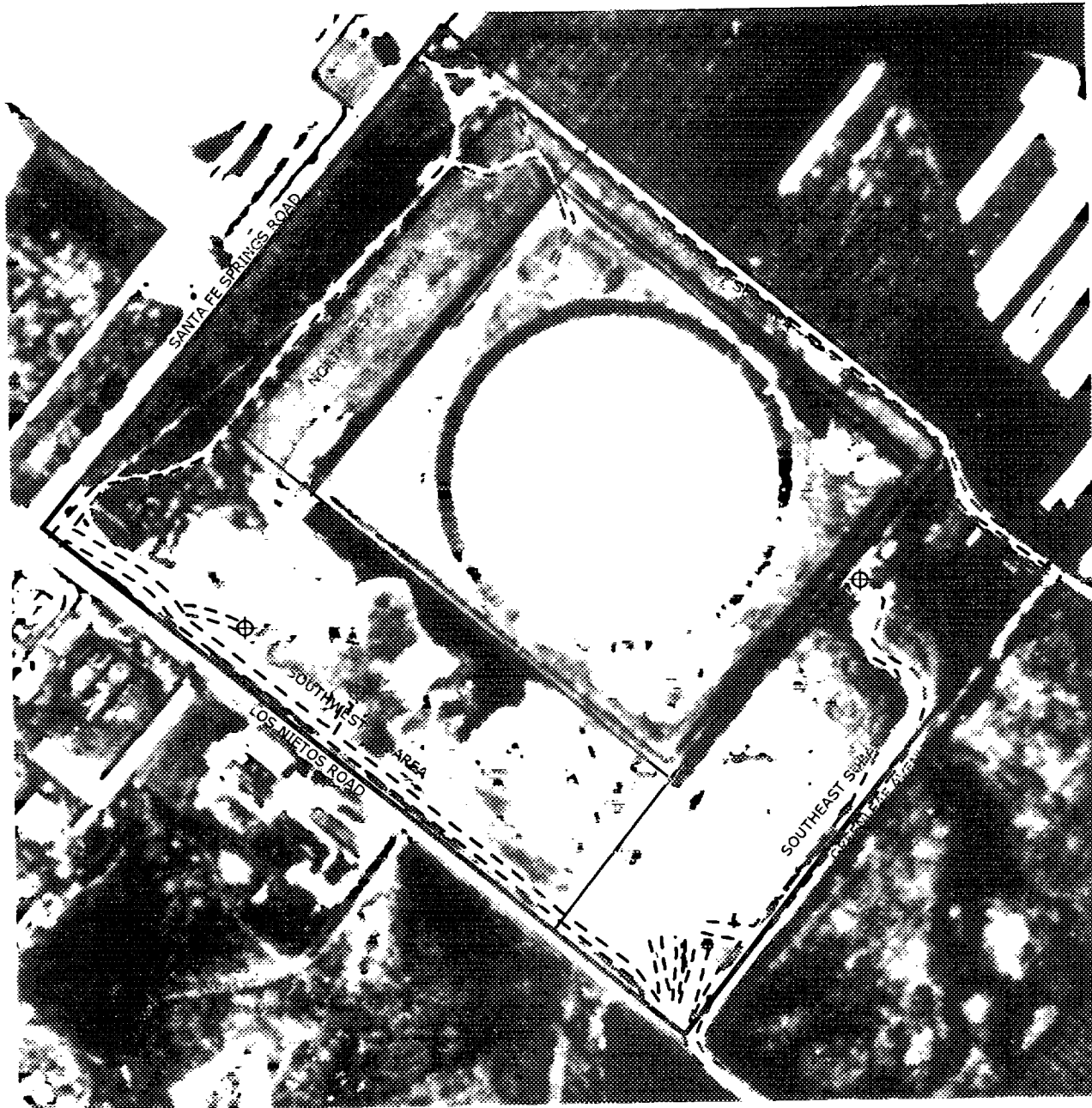


Figure 16. Waste Disposal, Inc., site, 1928. Approximate scale 1:4,230.

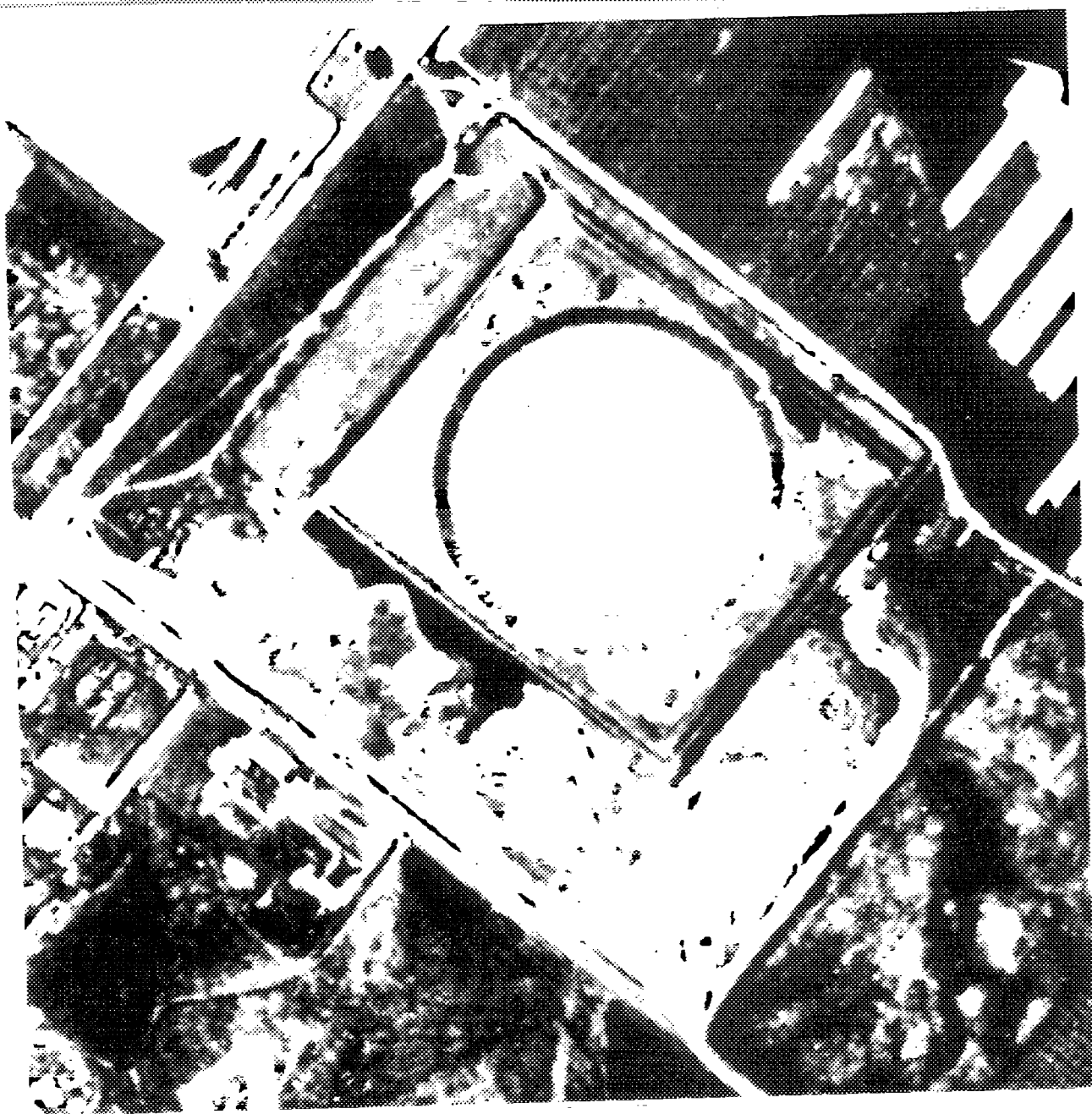


Figure 16. Waste Disposal, Inc., site, 1928. Approximate scale 1:4,230.

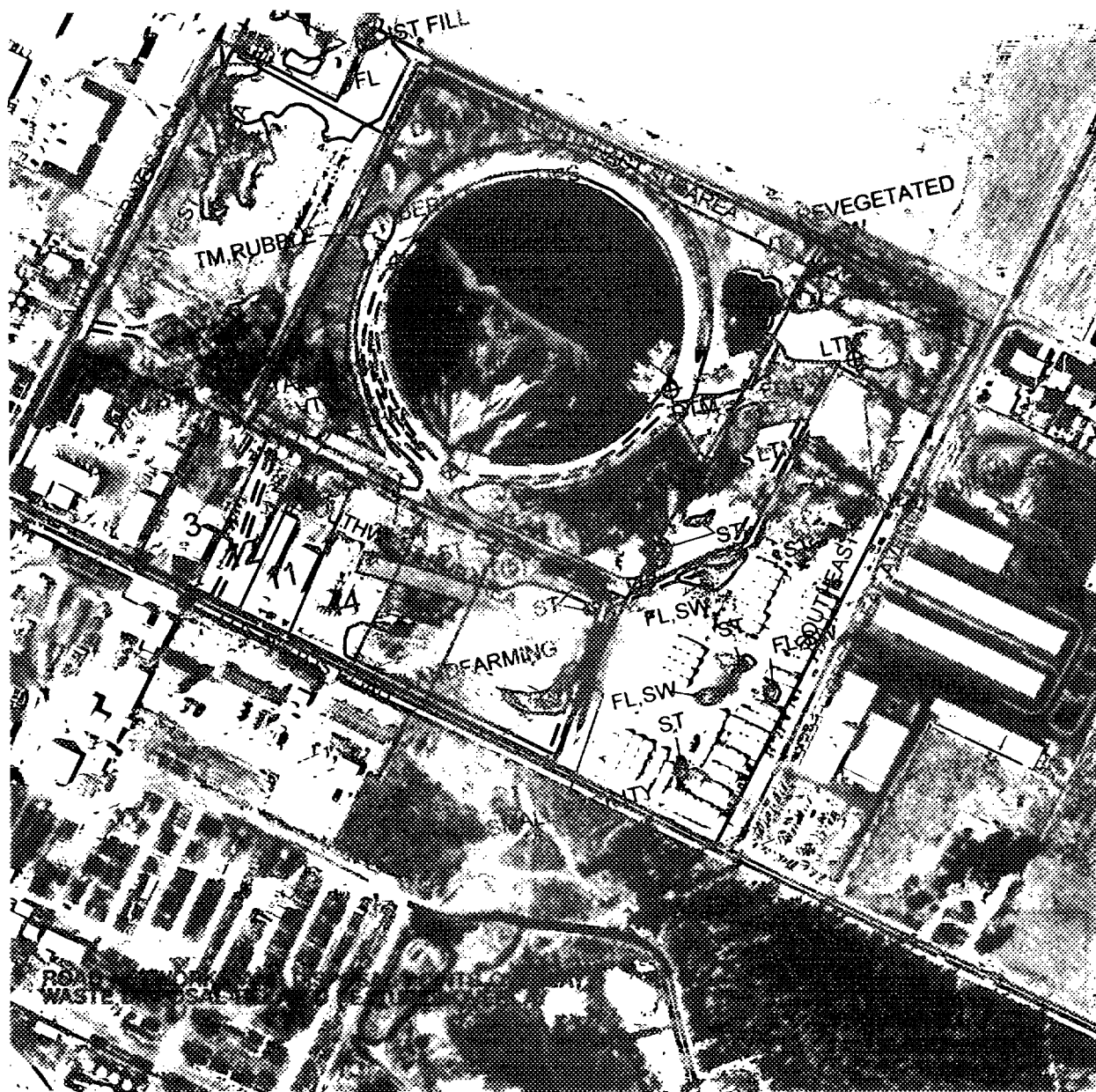


Figure 17. Waste Disposal, Inc., site, August 9, 1955. Approximate scale 1:4,810.

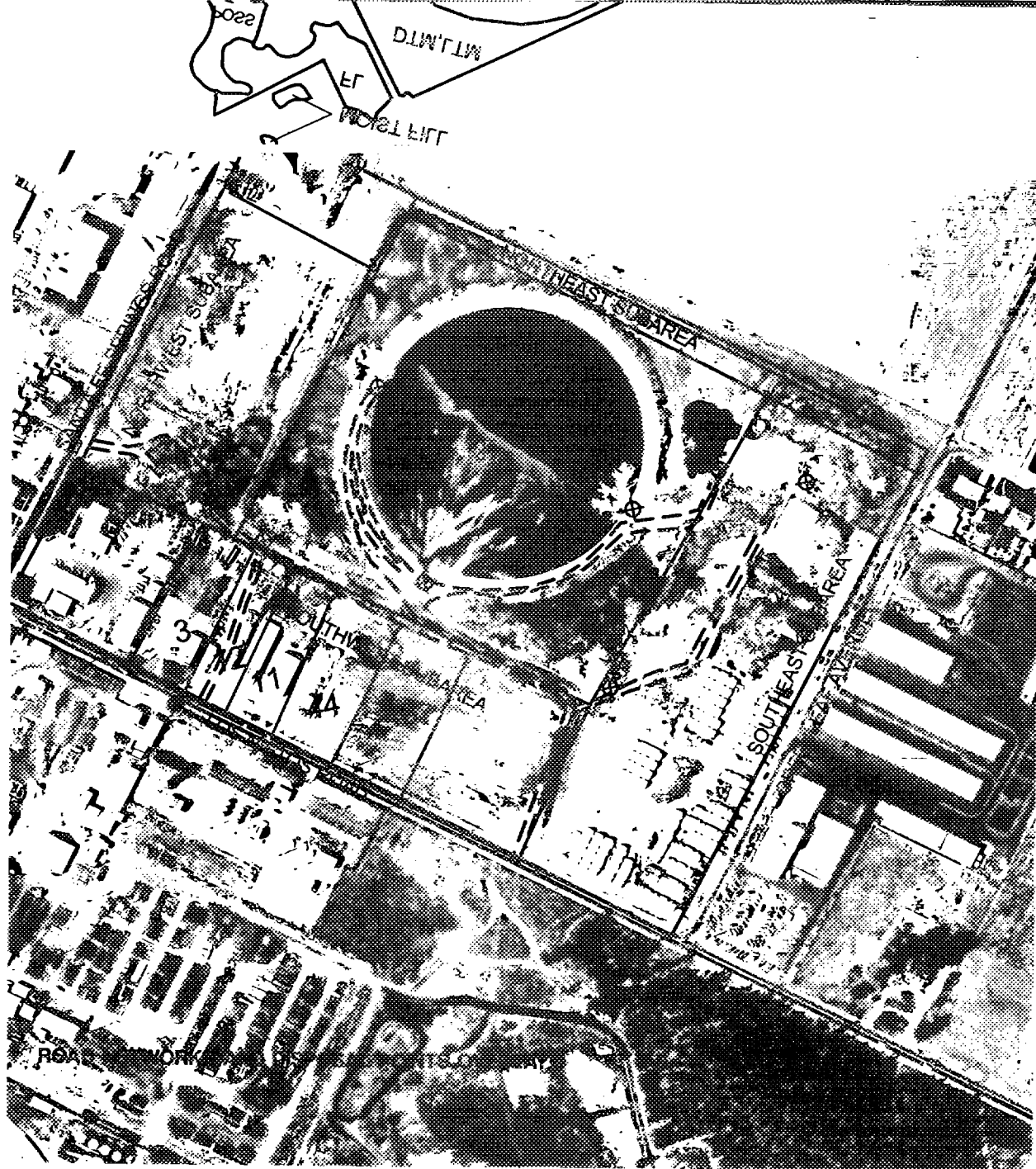


Figure 17. Waste Disposal, Inc., site, August 9, 1955. Approximate scale 1:4,810.



Figure 17. Waste Disposal, Inc., site, August 9, 1955. Approximate scale 1:4,810.



Figure 18. Waste Disposal, Inc., site, June 15, 1959. Approximate scale 1:4,150.

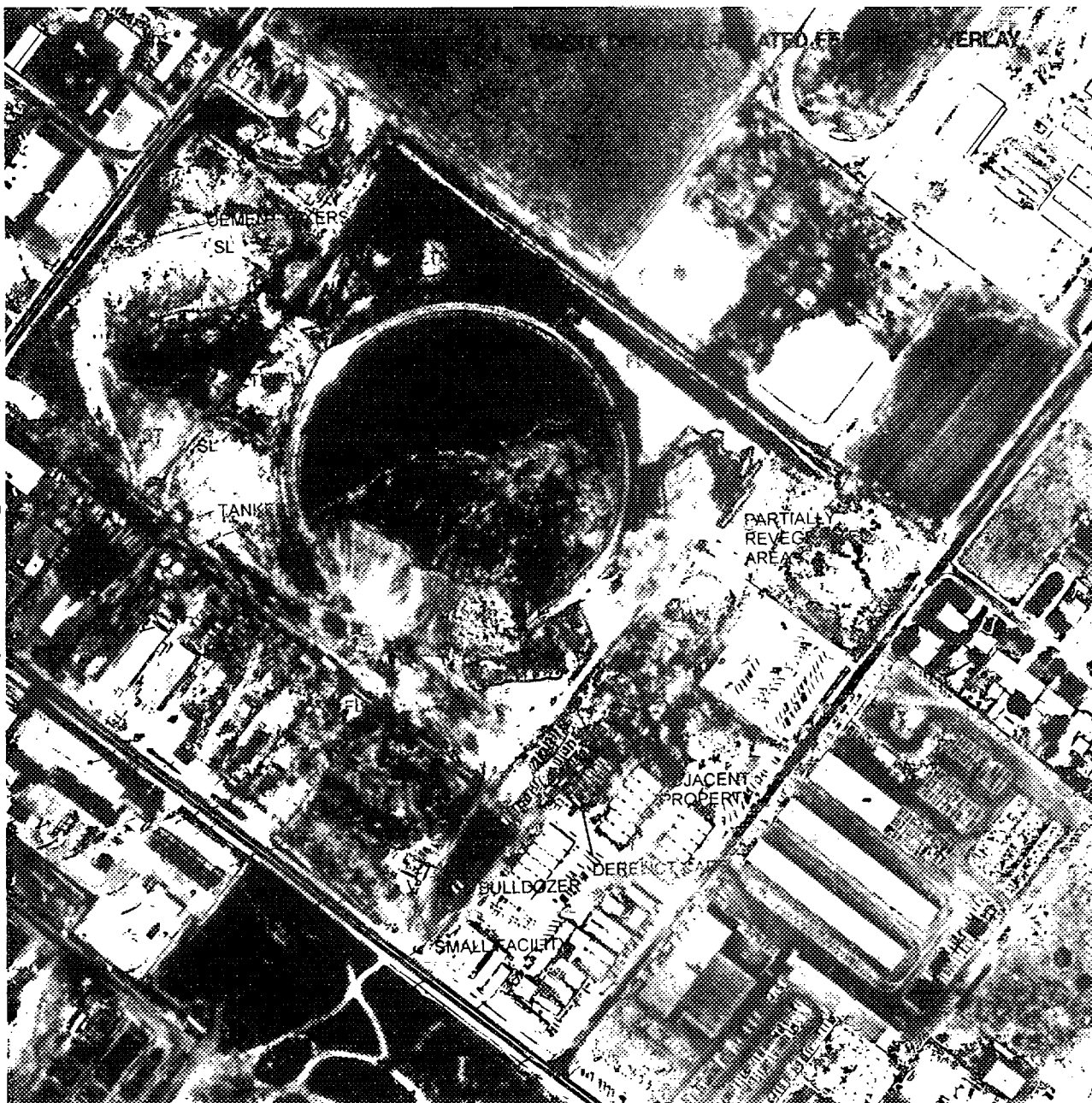


Figure 18. Waste Disposal, Inc., site, June 15, 1959. Approximate scale 1:4,150.



Figure 18. Waste Disposal, Inc., site, June 15, 1959. Approximate scale 1:4,150.

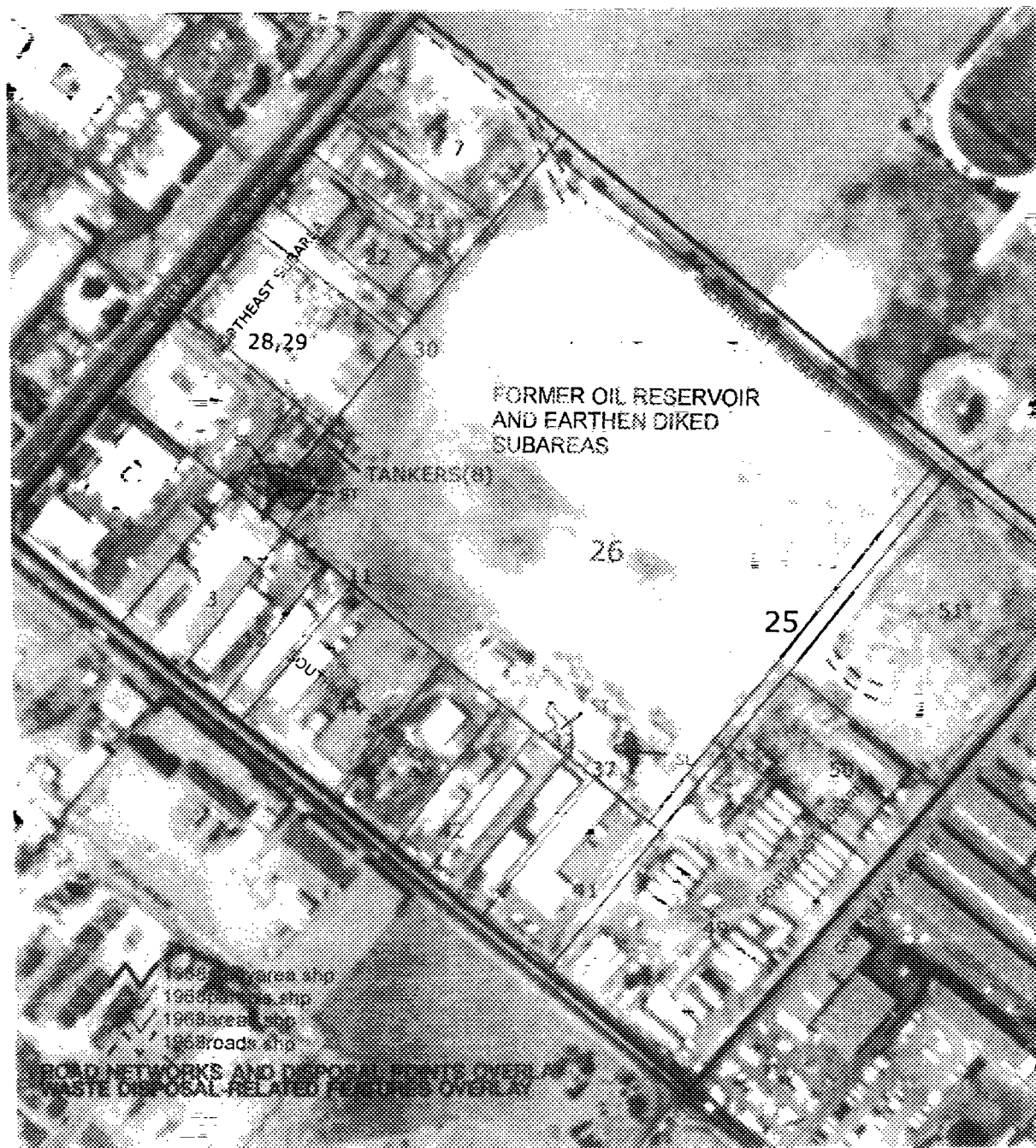


Figure 19. Waste Disposal, Inc., site, September 23, 1968. Approximate scale 1:4,030.

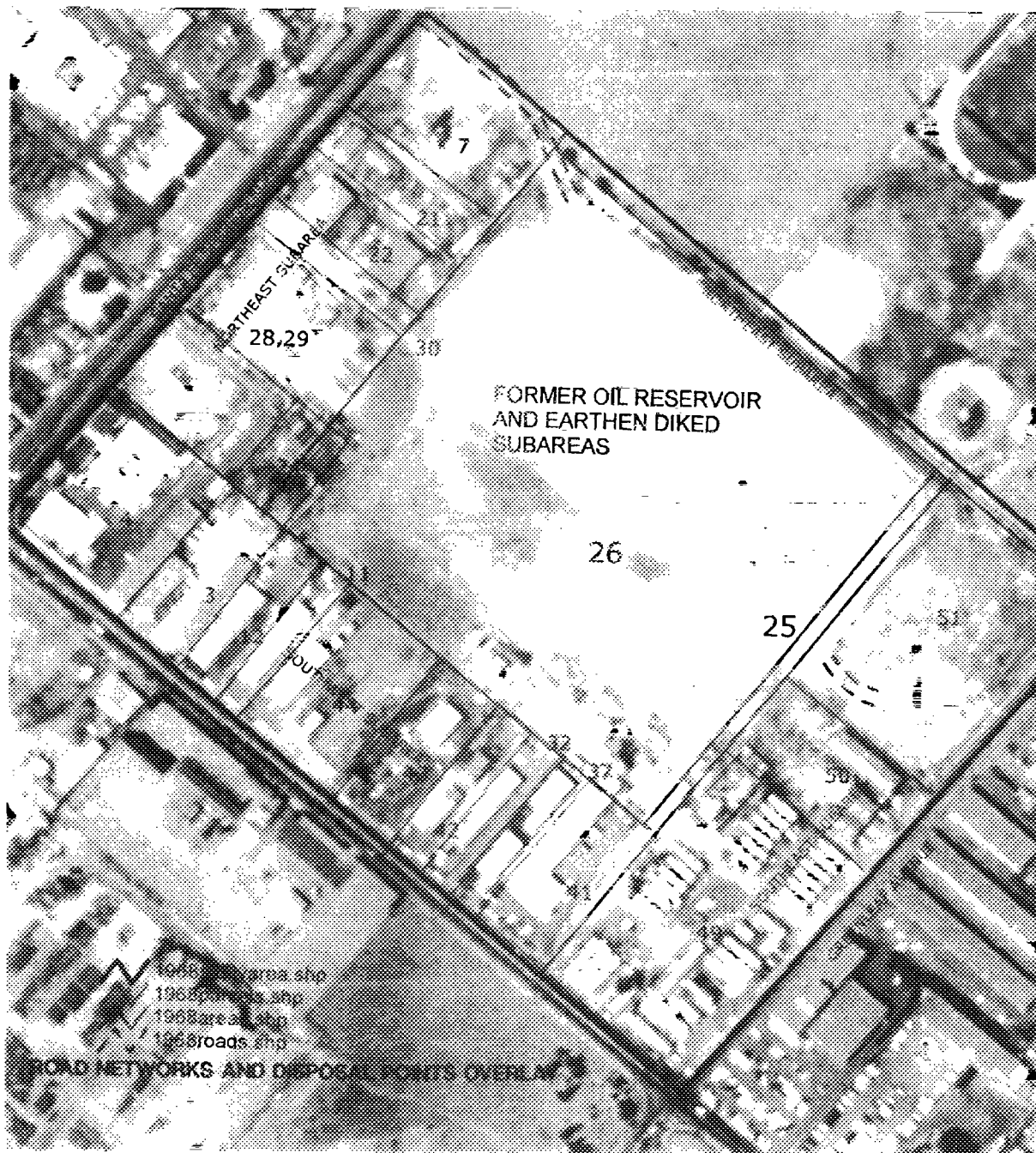


Figure 19. Waste Disposal, Inc., site, September 23, 1968. Approximate scale 1:4,030.

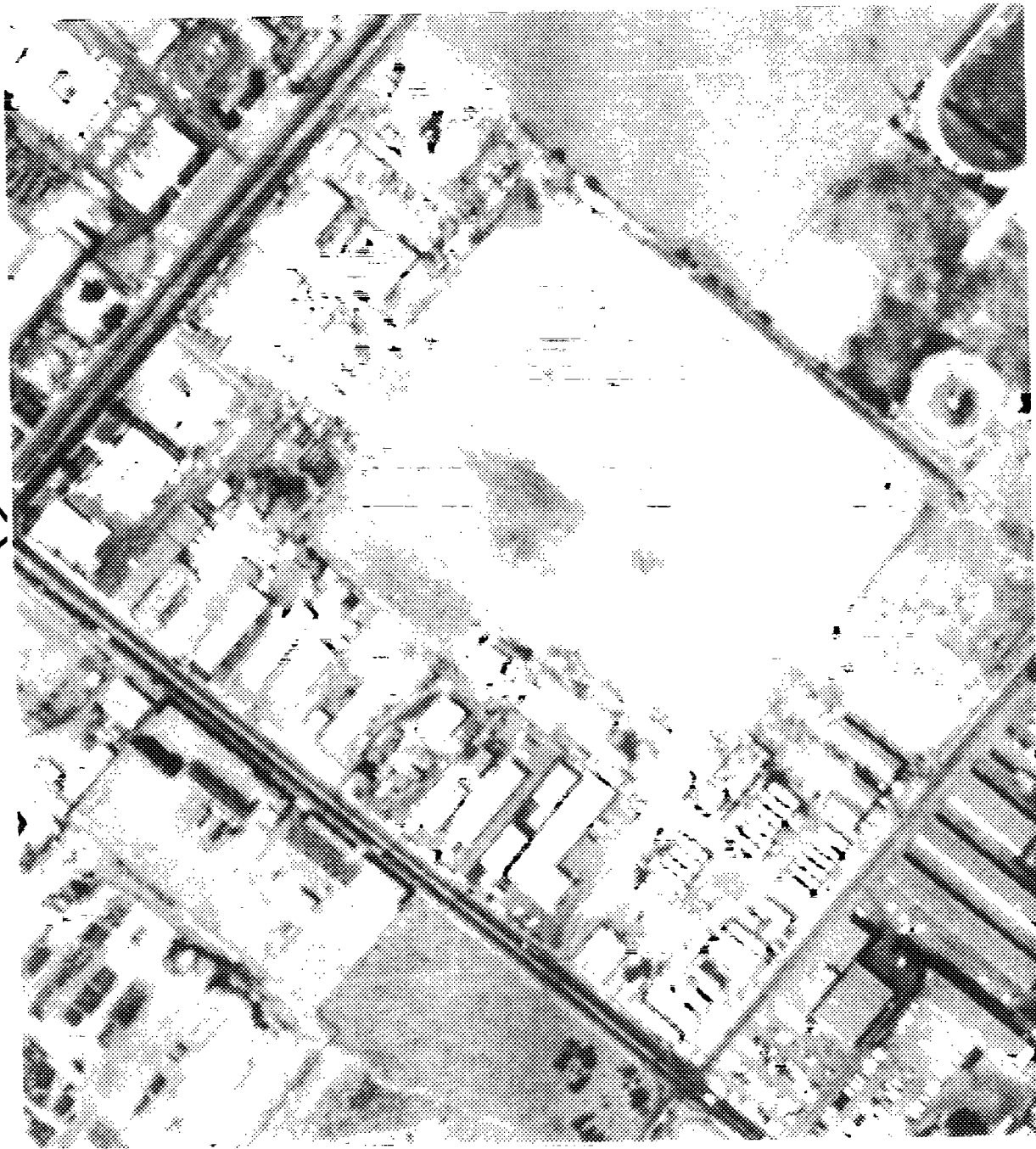


Figure 19. Waste Disposal, Inc., site, September 23, 1968. Approximate scale 1:4,030.

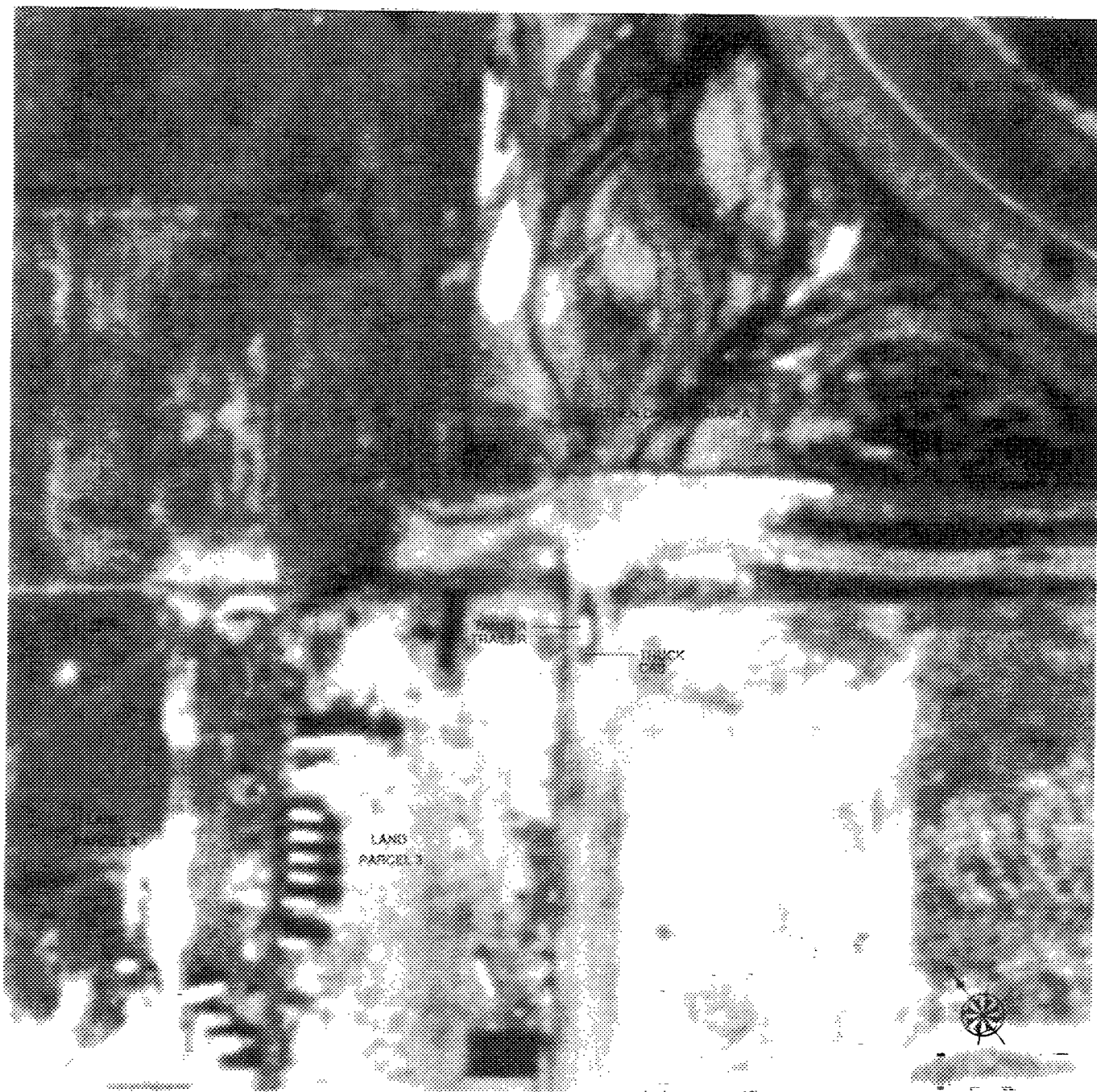


Figure 20. Waste Disposal, Inc., site, Tanker on road at western corner of the Earthen-Diked Subarea, February 25, 1951. Approximate scale 1:960.

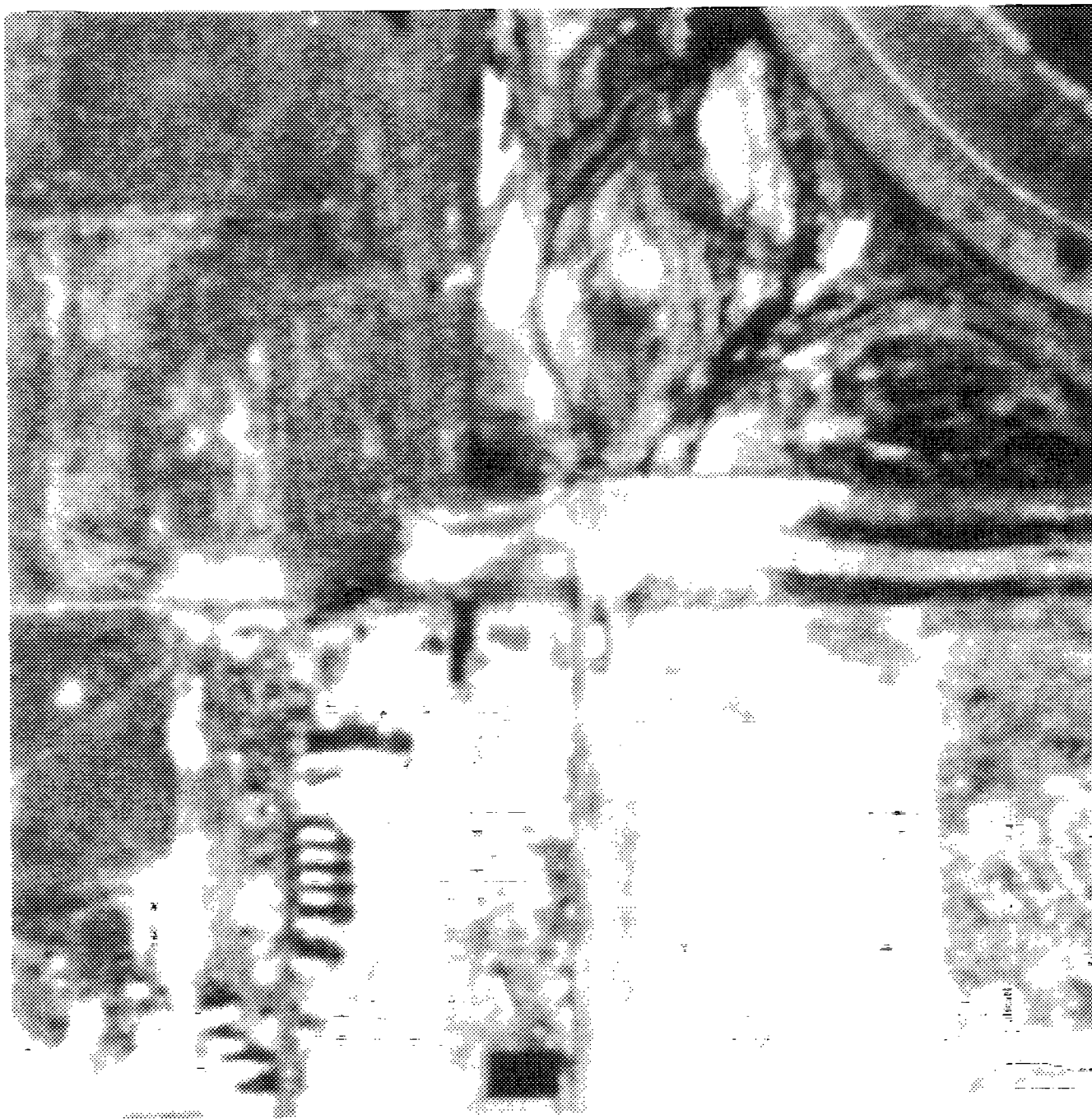


Figure 20. Waste Disposal, Inc., site, Tanker on road at western corner of the Earthen-Diked Subarea, February 25, 1951. Approximate scale 1:960.

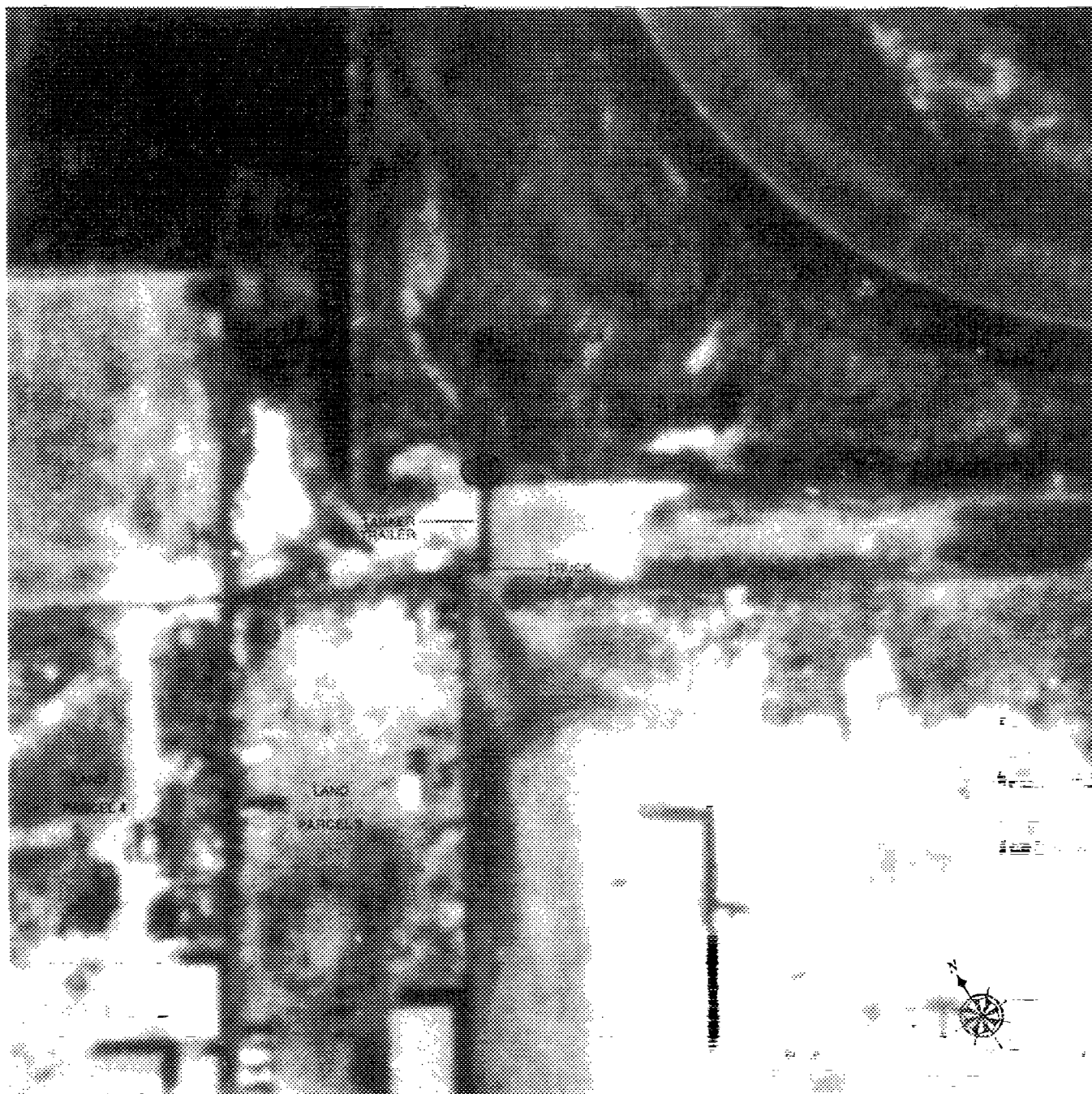


Figure 21. Waste Disposal, Inc., site, Tanker parked at western corner of the Earthen-Diked Subarea, July 27, 1951. Approximate scale 1:1,150.

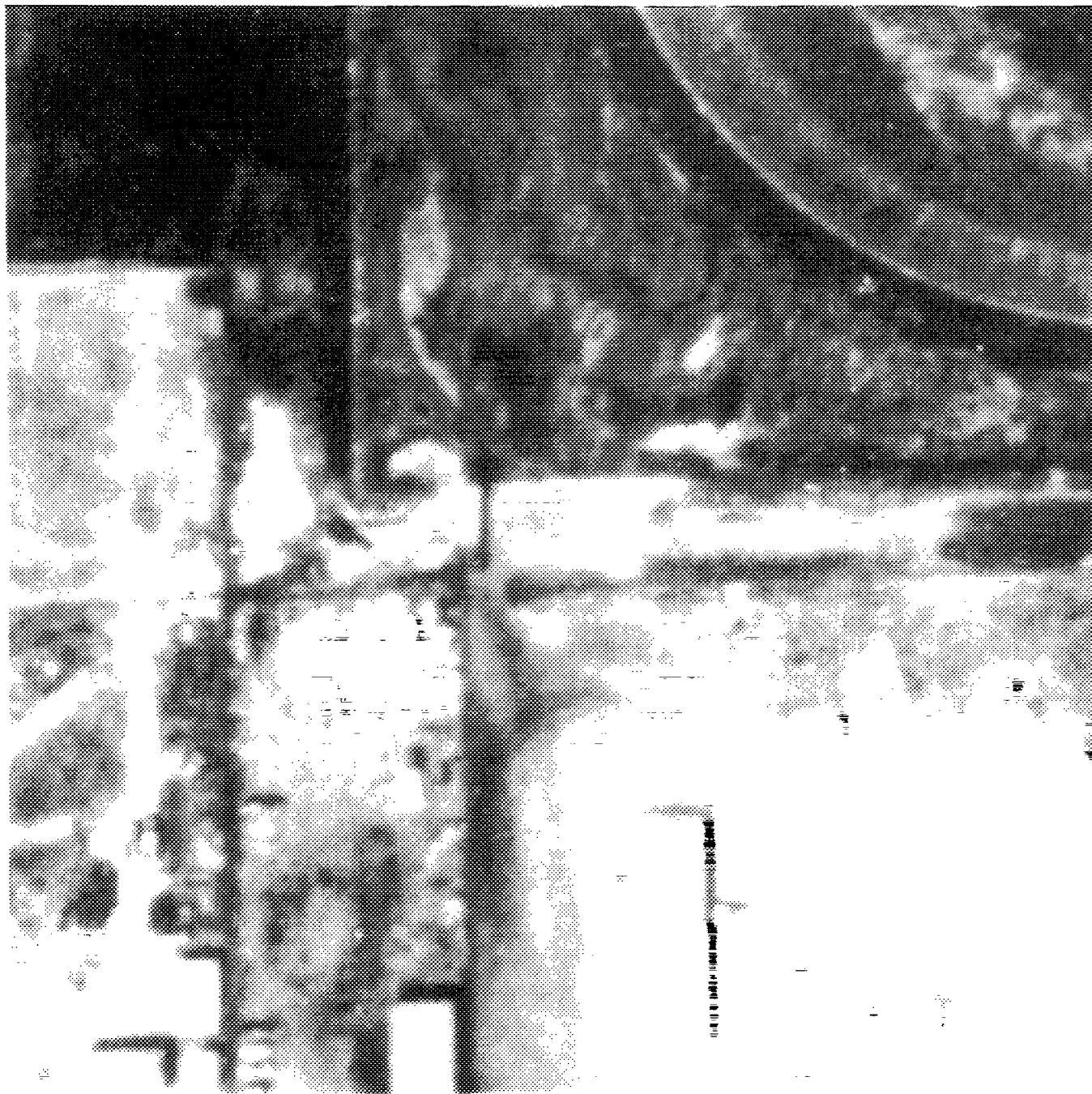


Figure 21. Waste Disposal, Inc., site, Tanker parked at western corner of the Earthen-Diked Subarea, July 27, 1951. Approximate scale 1:1,150.

GLOSSARY

Access Road - A paved or unpaved route of vehicular access.

Berm/Dike - An embankment of either natural or man-made materials that impounds liquids, solids or other materials, or controls flood waters.

Dark-, Medium-, or Light-Toned - Tones of features in question are compared with the darkest and lightest tones of gray (if using E&W photography) on the print.

Drums (DR) - Metal cylinders used for the storage, transportation, or disposal of materials.

Excavation Area (EX) - An area where earth or other material is being removed in order to alter the ground level (e.g., building construction).

Fill (FL) - Earth, stones, or other material that is used to build up the level of an area of ground.

Graded Area - An area where the surface of the ground has been leveled or altered by a vehicle pulling or pushing a wide blade.

Impoundment (IM) - A liquid containment area that appears to be related to activity on a site but does not appear to be used for waste storage, disposal and/or treatment.

Landfarm - Agricultural setting where waste material is applied to, or incorporated into the soil. This is sometimes used as a method of waste disposal/treatment. It also includes the use of wastes as fertilizer or soil conditioner.

Solid Waste (SW) - Any garbage, refuse, or sludge from a waste treatment, water supply treatment plant, or air pollution control facility, and other discarded material, including solid or semi-solid material resulting from industrial, commercial, mining, and agricultural operations, and from community activities; does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.

Stain (ST) - A residue or discoloration resulting from a spill, discharge, or removed/dispersed materials.

Standing Liquid (SL) - A small, shallow, temporary collection of liquid, not necessarily waste. Not to include liquid contained in impoundments, trenches, pits, etc.

Tanks - Vertical tanks (VT), horizontal tanks (HT), pressure tanks (PT), tank farms, and solid waste management units. A large receptacle, container, or structure for holding liquid or gas.

REFERENCES

MAPS

Source ^a	Figure(s)	Name	Scale	Date
USGS	1	United States	1:2,500,000	1972
USGS	2	Whittier, CA	1:24,000	1981
EPA	3-15	Waste Disposal, Inc. site map	1:3,850	1997

COLLATERAL INFORMATION

EPA. 1998. Collateral Information (reports and maps) provided by Region 9.
38 pp.
LESAT (Lockheed Environmental Systems & Technologies Co.). 1998. Master
Quality Assurance Project Plan. Prepared for EPA Environmental Sciences
Division. Contract 68-C5-0065. Las Vegas, Nevada.

AERIAL PHOTOGRAPHS

Photo source ^a	Figure ^b	Date of acquisition	Original scale	Film type ^c	Mission I.D.	Source frame #
WHIT	d, e	03-04-22	Oblique	B&W	-	-
WHIT	e	06-10-23	Oblique	B&W	-	-
WHIT	d, e	02-13-24	Oblique	B&W	-	-
WHIT	d, e	07-28-26	Oblique	B&W	-	-
WHIT		00-00-27	1:18,000	B&W	C-113	560
WHIT	8	00-00-28	1:18,000	B&W	C-300	378
WHIT	e	07-07-33	Oblique	B&W	0-3609	-
WHIT	d	08-16-36	1:18,432	B&W	C-4131	14,28
WHIT		02-20-37	1:11,400	B&W	C-4338	11,12
WHIT		01-01-45	1:9,600	B&W	C-9250	56,57
WHIT	d	06-18-47	1:24,000	B&W	C-11351	66,67
WHIT		02-16-49	1:24,000	B&W	C-13373	60,61
WHIT	d, e	02-01-51	1:12,000	B&W	C-16129	#2 S:2
WHIT	12	02-25-51	1:12,000	B&W	C-16129	S:5
WHIT	d, e	04-22-51	1:12,000	B&W	C-16129	#3 S:13
WHIT	13, e	07-27-51	1:12,000	B&W	C-16129	#3 S:2
WHIT	d, e	10-06-51	Oblique	B&W	-	0-012350
WHIT	d, e	05-04-52	1:12,000	B&W	C-16129	#3 S:18
UCSB	d	06-13-52	1:30,000	B&W	C-2062	70,71
ASCS		10-19-53	1:20,000	B&W	AXJ	149,149,150
WHIT	9	08-09-55	1:4,800	B&W	C-22218	55
WHIT	d	09-01-55	1:12,000	B&W	C-22246	1:5, 1:19
WHIT		01-17-56	1:12,000	B&W	C-22246	2:1, 2:13
WHIT	d	02-03-56	1:12,000	B&W	C-22246	10
WHIT	d	02-09-56	1:12,000	B&W	C-22246	7,8

(continued)

AERIAL PHOTOGRAPHS (continued)

Photo source ^a	Figure ^b	Date of acquisition	Original scale	Film type ^c	Mission I.D.	Source frame #
WHIT		01-17-58	1:36,000	B&W	C-23023	14
WHIT	d,e	09-08-58	1:12,000	B&W	C-23224	236
WHIT	10	06-15-59	1:4,800	B&W	C-23575	104
WHIT	d	06-17-59	1:4,800	B&W	C-23575	2:3,2:4
WHIT	d	05-05-59	1:20,000	B&W	C-23578	70
UCSB	d	06-30-60	1:20,000	B&W	23870	2312,2313
UCSB	d	03-13-62	1:24,000	B&W	157V	98,99
WHIT		12-02-62	1:14,400	B&W	C-24385	5-1
USGS		02-28-63	1:20,000	B&W	VASK	1-42,1-43
UCSB	d	10-17-66	1:24,000	B&W	HBJE	23,24
WHIT	11	09-23-68	1:24,000	B&W	-	218

^aASCS U.S. Department of Interior, Agricultural Stabilization and Conservation Service, Salt Lake City, Utah

UCSB University of California at Santa Barbara, Santa Barbara, California

WHIT Fairchild Aerial Photography, Whittier College, Whittier, California

^bPhotographs with figure numbers are included in this report to depict examples of waste-related features present at the Waste Disposal, Inc., site.

^cB&W Black-and-white

^dThese photographs were examined to access trends in waste disposal activity between sets (dates) of other photographs that were used in the analysis of the site. However, interpretive data were not extracted from them nor are they included in this report.

^eStereo photography not available